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ABSTRACT

The primary concern of this project was to obtain high-quality critiques of research studies in music education. To identify significant studies, the University of Illinois reviewed 782 dissertations in music education written since 1960. A number of these dissertations were critiqued and disseminated through the "Bulletin for the Council of Research in Music Education," published since 1965. The twofold aim of this council is to improve both teaching and research in the field. Approximately 80 critiques are available in this final report. Topics include aspects of music education in the primary, secondary, and college levels of public education. [Not available in hard copy due to marginal legibility of original document.] (LN)

ED035100

A CRITIQUE OF RESEARCH STUDIES IN MUSIC EDUCATION

USOE Research Project 6-10-245, Arts and Humanities Branch

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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FINAL REPORT

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A CRITIQUE OF RESEARCH STUDIES IN MUSIC EDUCATION

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The primary concern of the project was to obtain high-quality critiques of research studies in music education. By critique is meant not only a critical estimate but also a meaningful summary in practical terms of the implications which each piece of research holds for the music educator. The argument was made that until the present time, music education research has made no noticeable impact upon philosophy, methods, materials, or objectives of public school music; research has been with rare exceptions completely ignored by the practicing music teacher. Two of the reasons are probably the lack of dissemination of research studies due to the inaccessability of microfilm information to teachers; and second, the inability of the average music educator to evaluate, criticize and utilize the research with which he does become familiar.

It is no secret that research in music education is of varying quality, much of it of little value because it is done without adequate knowledge of design, statistical and sampling procedures and evaluative techniques. In many cases poor research not only has little value but actually is a negative force in the profession because of unwarranted assumptions, interpretations, and conclusions. That which is valid tends to remain unheeded and unused because it is couched in the language of research and, therefore, often inaccessible to the uninitiated who are unable to apply it with its particular strengths and/or weaknesses to the classroom situation.

Public school music is under considerable criticism at present, both from the music teacher and from the professional musician. Much of this criticism stems from the fact that teaching procedures and materials used in the classroom have been adopted on purely subjective bases with no attempt to discover what actual results their use might produce in terms of musical learnings.

Critiques which give an objective evaluation of the results of research, and which show how these results can be applied in the classroom can contribute greatly to the improvement of music teaching and learning. These also can strengthen research in music education by pointing out weaknesses in present studies in order to help improve the accuracy and validity of future studies. With this in mind, a group of research music educators met in Minneapolis in 1963 to form a Council for Research in Music Education, members of the Council being those individuals undertaking critiques of research studies. As this was the first effort of its kind in the profession, it was decided to critique a few studies and disseminate this information as a pilot publication to determine its feasibility and reception before establishing definitive goals and objectives. Representatives from eight states attended this meeting and agreed to cooperate in the venture. A few critiques were published and disseminated, the result being enthusiastic response from libraries and the profession. The need was evident; the solution was to attract the best qualified reviewers to the task and to facilitate their work in every possible way.

The specific objectives of the project were as follows.

1. To identify those research studies in music education which are the most useful in terms of quality of research, relevance to past and future research, and pertinency for music teaching situation.

2. To procure critical reviews of such research, (a) showing the strengths and weaknesses of the study through analysis, interpretation, and evaluation; (b) indicating the implications for other researchers, the need for replication in same and altered situations, the needs for changes in design and/or treatment of data; and (c) where appropriate offering suggestions for simplifying the design so the study might be replicated in the classroom as action research.

3. To state in unsophisticated terms the implications of the study for use in the public school or college music program, its application to philosophy, teaching techniques, objectives, materials, media, curriculum and evaluative tools when these might be relevant.

4. To disseminate information about major research projects currently underway as well as completed work in other fields having implications for music education research critiques of doctoral dissertations in music education.

5. To enlist the help of experts within and outside the field of music education to review works in their special area of interest and competence.

6. To enlist the help of experts within and outside the field of music education to make suggestions regarding needed research, appropriate design, evaluative techniques, ideas needing exploration, categorization, terminology and similar matters, assisting and promoting the area of research in music education.

7. To improve both teaching and research in music education through the availability of these critiques and scholarly papers on a large scale.

8. To disseminate detailed information about major research proposals underwritten by the United States Office of Education and other major funding organizations in the field.

The project has been extrememly successful although it has not accomplished all of its objectives. The principal investigator evaluates the success of the project in the following manner.

In an effort to identify significant studies for review, the University of Illinois purchased microfilm copies of 782 doctoral dissertations in music education, nearly all of them written since 1960. These were read by the principal investigator or a graduate assistant and informally identified as to worthy. One-hundred and seventy dissertations were purchased in xerox edition for possible review. Doctoral advisers at each institution were asked to aid in identifying studies worthy of review; this elicited only a small response perhaps 20 studies being identified in this manner. Twice a year a list of available dissertations for review has been submitted to all doctoral advisers and they have selected likely titles for review. This serves as a further screening measure as several dissertations were returned as being of too poor quality to be reviewed for publication.

An active advisory committee has been established which consists of: Robert Sidnell, Chairman of Music Education at Michigan State University, Bennett Reimer, Chairman of Music Education at Case-Western Reserve University, Edward Rainbow of North Texas State University, Gary Martin of the University of Oregon, and George Kyme of the University of California. Ninety-one reviews have been furnished by doctoral advisers at the following institutions: Stanford, Pennsylvania State University, Eastern Washington University, George Peabody College for Teachers, University of Kansas, University of Texas, The Ohio State University, University of Washington, University of Alabama, University of Nebraska, University of Illinois, University of North Dakota, Eastman School of Music, University of Southern Mississippi, Michigan State University, University of Arizona, Northwestern University, Northern Illinois University, University of Iowa, Western Illinois University, University of Hawaii, Ball State University, Catholic University, Washington University, University of Indiana, University of Cincinnati, University of Connecticut, Southern Illinois University, University of South Florida, San Francisco State College, Kent State University, University of Kentucky, University of Wyoming, University of Oregon, University of Montana, University of Georgia, University of Missouri at Kansas City, University of Wisconsin, New York University, North Texas State, Case-Western Reserve University, University of Minnesota, Boston University, and East Carolina College.

The type of critique has varied just as the studies themselves vary. Some studies could not be translated into meaningful terms for the classroom teacher, either because they had no implications, the design was such that practical implications were not warranted at this stage, or because several stages would be necessary to effectively communicate between the researcher and the teacher. In the latter instance, at least the first stage has been bridged. There can be no argument but what the reviewers have been among the most knowledgeable leaders of the profession and that the objective of providing a meaningful review has been accomplished within reasonable expectations.

Dissemination has been equally successful. It takes the form of a publication entitled Bulletin for the Council of Research in Music Education of which 15 issues have been published since 1965. This publication is in constant demand by libraries, with more than 1,000 libraries presently requesting it. Some issues have been reprinted four times. Researchers appear to be using the Bulletin as one of the important sources in the profession, and recently requests for it have come as a result of recommendations of evaluation teams of the National Association of Schools of Music. Recent music education texts printed in Great Britain and Australia have cited the Bulletin; it appears in papers read at the International Society for Music Education with slightly less than 100 foreign music educators' names on the mailing list. A real effort has been made to focus the dissemination activities; three times in the past three years recipients have been asked to write to the editorial office if they desired to have their name remain on the mailing list and those failing to do so have been deleted. Failure to advise the editorial office of a change of address is also cause for deletion. Dissemination activities remain at three times the anticipated level.

Complete cooperation has been obtained from recipients of United States Office of Education research grants in music education to disseminate reports of their studies through the Bulletin and 42 articles have been published. These reports are omitted here in order to focus on the actual critiquing which has been accomplished. These reports are available from the project office, and all Bulletins are available from University Microfilms of Ann Arbor, Michigan.

There is no ready evidence that the Bulletin has improved teaching and research in music education although doctoral advisers seem to believe that its impact is being felt. Reviewers have criticized not only the scholarship but often the careless manner of reporting the work. The hurry to meet deadlines rather than to polish a piece of research is very much in evidence at all levels of music education research.

There appears to be an increasing need and demand for quality critiques in music education as the number of dissertations increases. An additional 20 critiques will be disseminated in the next two months with 53 presently in progress by music education scholars throughout the country.

Albright, Joe H. The Administration of Summer Music Programs in School Systems in the United States. Teachers College, Columbia Univeristy, 1963

Reviewed by C. A. Childs

This study is based on a questionnaire distributed among several summer music schools in population centers over 50,000. The author began by writing 313 superintendents of schools chosen from the six divisions of the Music Educators National Conference asking if there was a summer music program, and if so, the name and address of the director and the summer music schools in the area. A few extra summer programs were obtained by this method bringing the total to 348. Questionnaires were then sent to these directors.

The best response came from the eastern division, but the north-central had more summer music activity. Of note is that there is a higher incidence of summer music activity in areas between 50,000 and 99,000 population than any other. Generally speaking, the larger the population center, the smaller the incidence of summer music activity seemed to be.

Some of the facts gleaned from the questionnaire were:

1. There seems to be an equal distribution between boys and girls enrolled in summer music programs.

2. Elementary and junior high students make up the vast majority of summer school enrollments.

3. The main purposes of summer music school are: musical growth, aesthetic values, and recreational activity.

4. There has been a growth of 300 percent in summer schools since 1945.

5. Some characteristics of responding summer music schools were:

   51 percent had a six-weeks program.
   84 percent had school five days each week.
   37 percent had one-hour classes.
   32 percent said average student in class two hours each day.

6. The average teacher-pupil ratio was 62.5 - 1.

7. The strongest single financial supporter was the board of education. Its support is evidenced in use of building, use of school-owned instruments, and direct financial support.

* Order number 64-1461, microfilm $5.35, xerox $18.90.

8. The average fee was $10.75 with ten areas giving free instruction.

9. "...43.4 percent reported no homogeneous classes.... Thus, a total of 56.6 percent of the respondents have more favorable conditions for providing quality instruction."[1]

Part II of this study is that of a model school. It is based mainly, if not wholly, on the author's experiences in a city of New York state where he had been director of the summer music school for seven years prior to this investigation. This school is truly a model of organization and close attention to intricate details.

Chapter IV gives in detail the functions of the summer school for the student, the teacher, superintendent, principal, director of music, and community. This chapter should be in the hands of everyone responsible for administering a summer music program. It would help give them vision beyond the millions of mundane tasks that must be performed.

Chapter V covers the organization of the program with equal emphasis on the human and material means. On the human side, the author includes an advisory council, director of summer music, and staff. The reader is appropriately urged to include lay people from civic groups on the advisory council and various criteria are utilized in choosing the staff who may or may not be from the academic-year school staff. The director of summer music has a superhuman description.

The five areas of the model summer music program are: (1) instrumental classes, (2) voice classes, (3) related subjects, (4) performing groups, and (5) recreational activities. These are designed as means for realizing these functions: developing the student's aesthetic and aural potentials to the highest possible level as (a) an instrumental and vocal performer, (b) a perceptive listener, (c) a composer, (d) an experienced musician, and (e) a person who is musically independent and a responsive musician.[2]

This is followed by an excellent discussion of the procedure for determining the cost of the program. From the cost the author estimates the total number of students who will attend and thereby establishes the fees. This is quite opposite from this writer's experience where the Board of Education establishes the fee for all summer school courses, and it is then up to each department involved to pay for its expenditures.

It should be added at this point that the author's summer school has a basic fee of $26 compared to the average fee mentioned earlier of $10.75, and an average class size of 8.14 which is considerably below the average of the schools which returned the questionnaires. This should give the reader some idea of the financial structure of the model summer program advocated by the author.

Chapter V includes an excellent list of procedures for advertising the summer school through news releases, radio, and television spot announcements. Time schedules are given for this publicity including suggested letters and examples of various announcements. Anyone who has the responsibility of promoting a summer program in any subject area could gain from reading this chapter.

Chapter VI concerns itself with the "Organization of the Program." The model school is a centralized program where all summer music is taught in one building. A complicated schedule is worked out so that each student will take at least one-half hour in each of the following areas: homogeneous class lesson in his major performing medium, rudiments of music, major performing organization, and minor performing organization. Other electives are available at the rate of $7.50 per class in music appreciation, class piano, and guitar. Intermediate and advanced students may elect to take any of the following: ensembles, arranging, composing, opera workshop, conducting, dance band, and jazz combo. Several of these electives have certain requirements before a student is admitted. Everything is spelled out in detail including "Procedures used in instrumental classes in learning new music"[3] which is an excellent outline for any class.

The model school is truly a high mark for all summer schools to emulate. The centralized type of school is able to offer a comprehensive music curriculum while a summer music program spread throughout the city will, of necessity, be more limited in its courses of study. The author's model school approaches a day-camp situation with music and recreational facilities.

Chapter VII dwells on the "Improvement of the Program." In this discussion the importance of self-evaluation and research are stressed. Improvement guides are "(1) recognition of the problem, (2) organization of a study group, (3) investigations and functions of the program, (4) selection of patterns of change, (5) advisory council approval, (6) organization of instruction, and (7) operation of the revised program."[4] Each item is examined in detail.

The final chapter (VIII) gives a summary of the author's findings and recommendations for the proper administration of a summer music school. The nine recommendations are given below.

1. The development of musicianship (aptitudes, insights, and skills), through the extension of the student's aural and aesthetic response to tone, should be the primary purpose of summer music schools.

2. Summer music schools should be established in every population center where the need exists.

3. Summer music programs should be organized as a centralized type of school.

4. Students should be provided instrumental, keyboard, and vocal experiences.

5. Students should have a daily minimum of four periods of instruction or rehearsal.

6. Most classes should be organized in homogeneous groupings.

7. Classes should range in size from four to twelve with an average of eight students.

8. Weekly informal concerts should be presented.

9. Opportunities for improvement should be provided.[5]

"These (recommendations) are based upon the findings of this study and the convictions of this investigator, derived from his experience."[6] This writer is inclined to believe that the recommendations are based solely on opinion rather than on an interpretation of the author's findings through a compilation of the results of the questionnaires. Herein lies my only quarrel with the author. Someone once said that a questionnaire was a "collection of ignorance." This study must concur in that opinion because the author spent many of his pages on the model school which is not only an ideal, but a reality. However, the model is not based on a scientific study. The recommendations that close the study are a direct reflection of the model school and not based on the information gleaned from the questionnaire.

In spite of this, the author's model school deserves more notice. It should set the pattern for many of us, and I strongly recommend that the author revise Part II of this study so that his model school could have more general applications. The Music Educators National Conference would do the members a service if they would publish this. According to this study, summer music activities have grown 300 percent since 1945. Most of these have grown like the proverbial Topsy, and much of this study could serve as a guide to better our own programs.

Footnotes

1. p. 98.

2. p. 161.

3. p. 265.

4. p. 312.

5. pp. 354-361.

6. *Ibid*.

Anderson, John Martin. The Use of Musical Talent, Personality, and Vocational Interest Factors in Predicting Success for Student Music Teachers. Reviewed by Marian Petersen. University of Southern California, 1965.

The problem of teacher selection has received careful scrutiny during the past few years; however, little of the research has pertained exclusively to the field of music education. This lack of specific knowledge has occasioned the Anderson study which includes both a survey of previous studies and the author's own research in this area.

The study has as its purpose the identification of "existing evaluative instruments which measure qualities that leading American educators have considered important as characteristics of successful music teachers...to determine the relation of these various quality measures to successful student teaching in music...to determine which of these characteristics measured have value for purposes of prediction."

Much evidence from previous studies seems to indicate that intelligence and scholarship are of less predictive value than are success in practice teaching and certain personality traits. Among the traits found to be statistically significant in differentiating between successful and unsuccessful music teachers are friendliness and alertness. Successful and unsuccessful teachers differ, but to a lesser degree, in terms of "sociability, restraint, ascendance, objectivity, tactfulness, enthusiasm, sensitivity, creativeness and sincerity."

The Anderson experiment utilized three sample groups. Group One consisted of ten master teachers selected on the basis of their outstanding contributions to music education and their professional success. The group included music supervisors and teachers from the college, high school, and junior high levels. Twenty tenure teachers comprised Group Two. There were both choral and instrumental directors; elementary, junior high, and high school levels were represented.

Group Three was composed of nineteen student teachers. Ten of these were rated high-potential and nine were rated low-potential student teachers on the basis of a composite grade of their master teacher and the coordinator of music training. The instrument used was the University of Southern California Student Teaching Rating Scale; the students were ranked according to number of points received.

All three groups were given the Guilford-Zimmerman Temperament Survey, the personality traits of which corresponded rather closely with those believed to be important by many music education experts, such as general activity, restraint, ascendance, sociability, emotional stability, objectivity, friendliness, thoughtfulness, personal relations and masculinity. They were also given the Kwalwasser Music Talent Test, a set of 53 tone patterns repeated with variations in pitch, time, rhythm, or loudness.

Because of the small size of the student sample they were given in addition, Guilford's The Project Potential Tests of Creativity, a six component test dealing with sensitivity to problems, fluency of thinking, flexibility in thinking, elaboration ability and redefinition; and the Guilford-Zimmerman Interest Inventory, consisting of ten scales--mechanical, natural, aesthetic, service, clerical, mercantile, leadership, literary, scientific and creative.

Both nonparametric statistical procedures and correlation coefficients were utilized in making comparisons. The high-potential and low-potential student teachers were compared; the student teachers were compared with the tenure teachers, and the high potential student teachers were compared with the master teachers.

Statistically significant differences between the high-potential and low-potential student teachers were revealed by the objectivity and masculinity factors of the Guilford-Zimmerman Temperament Survey, the music talent from the Kwalwasser Music Talent Test and the symbol production factor from The Project Potential Tests of Creativity. Since the sample was small and highly selected, the emotional stability and personal relations factors might have had predictive power since they reached the ten percent level of significance.

Comparison of the student teachers with the tenure teachers revealed the tenure teachers to be generally more objective, friendly and significantly better in personal relations. The student teachers were significantly higher in masculinity. There were no statistically significant differences between the high potential student teachers and the master teachers, although the master teachers scored somewhat higher in emotional stability.

Three of the four tests utilized in the Anderson study seemed to be of some predictive value; the interest inventory was the only one of the four in which no factor showed a significant difference between high-potential and low-potential student teachers.

Mr. Anderson concludes that "objective measurements, such as those used in the present study, can be further validated and employed in finding the characteristics of those student music teachers who bring about the desired progress and change in students," and that while the results of his study are not conclusive, they do imply that further exploration of these instruments with larger populations may prove to be of value.

There is what is apparently a typographical error on page 85 of the study, which may be rather confusing to the casual reader. On page 79, Anderson states that "the tenure teachers were found to be somewhat more objective, friendly and significantly better in personal relations. Student teachers were significantly higher in masculinity...." This information is reiterated on page 84, while the conclusions on page 85 state that "student teachers scored higher than tenure teachers in personal relations, objectivity and friendliness."

This writer would be curious to know why three of the four tests selected were authored by J. P. Guilford. Are there qualities in these tests which make them particularly suitable to music education; what are these qualities?

The Anderson study seems to be carefully done, and should supply valuable evidence in an area where much more knowledge is needed.

Angleman, Winfield Bradford. An Investigation of Musical Aptitude.*
University of Utah, 1964

Reviewed by Robert F. Noble

One of the continually recurring problems in music education has been the identification of musical ability in pupils. This has been a problem, first, because of our inability to identify exactly what makes up musical capacity, and, second, our inability to measure, validly, the individual's natural capacity. As Angleman indicated, we have had no existing procedures either to measure test data objectively or to refine testing techniques to make them valid. (Since Angleman's writing, Gordon's Musical Aptitude Profile published by the Houghton Mifflin Company in 1965 seems to have made real strides in musical capacity measurement.)

Angleman's excellent and valuable study involved experimental research into new possible measures of three dimensions of musicality. He began the study with a discussion of the well-known controversy between the theories of Carl Seashore (who wished to measure music dimension specifics) and James Mursell (the advocate of the molar theory of a total response to music), and developed three apparent hypotheses based on this controversy:

1. ". . . The ability to conceive of and reproduce meaningful musical relationships depends first of all on the sensitivity of the organism to tonal relationships . . ."

2. This hypothesis in turn ". . . depends on the degree of perceptual organization within the central nervous system and the level of perceptual motor functioning."

3. Further, ". . . there are rather large individual differences in this capacity.

In the pilot study for his actual thesis, Angleman used 25 music majors and 25 psychology majors as subjects where he asked them to construct a one-octave major scale using an audiometer. He added, in the actual study using 66 music majors, a test of discrimination of harmonic relationships, using the oscillator dial of the audiometer to which students set pitches of four triads, and a test of rhythmic relationships where the subjects used a telegraph key and tapped to a preset tempo of 18 beats per minute for one minute and five other tempos (tempos approximated by the subjects). For comparison, a faculty jury of three rated the subjects on (1) five musical dimensions and (2) a Likert-type rating scale on hearing, sense of time or rhythm, and musical performance. There is extensive (sometimes seemingly inappropriate) statistical treatment of data.

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*Order number 65-1799, microfilm $2.75, xerox $5.20

Like others, Angleman discovered that existing tests are similar to Seashore's on discrete auditory sensations or like Wing's which, in addition to testing basic aptitude, also test musical learning. All of these tests involve passive cognitive judgment instead of the conative factor which is so important to musical performance. Further, he concluded that:

1. Rhythm has very little to do with musical ability.

2. Diatonic scale tests are easier to give and more adaptable to young people than the chord (harmonic relationship) test.

3. The chord test does measure an important musical aptitude and is one which is relatively free from practice effects.

Although Angleman's study seems to be a real contribution to knowledge of capacity testing, there are three areas of the thesis of which the reviewer is critical. There has been controversy for years as to how much musicality is inherited and how much is the result of environment. Authorities in the field now seem to agree that whatever natural capacity one has, it is highly developable. Therefore, it seems to be amazing that Angleman used as his sample college majors in music, which would certainly be a biased sample of the population. One wonders why he did not attempt to use a more normally distributed smaple. Secondly, a problem with most doctoral experimental studies, it represents a "one-shot" analysis, where a longitudinal study of the problem with repeated tests of differing samples was needed. Thirdly, he did not--and perhaps wisely--attempt to answer his first and most basic question: What is musicality?

Nonetheless, Angleman's study represents a real contribution to knowledge. In this reviewer's opinion, too many doctoral studies today are based on normative surveys exclusively and rely too little on the results of experimental research, which alone can point toward better practice. The study was done in a thorough and logical manner, utilizing the best in research techniques.

Barrett, Roger L. A Study of the General Nature of Ideational Perception: Music. **State University of Iowa**

Reviewed by Marilyn Pflederer

The purpose of Dr. Barrett's dissertation was "to explore the general nature of the ideational factor in music" from three viewpoints: (1) a person's ability to identify ideational content; (2) human factors contributing to this discriminative ability; (3) implications for teaching in a college general music appreciation class. Dr. Barrett's study was implemented by the construction and validation of an instrument to measure objectively the ideational factor in music. His study accepted as a basic premise the theory "that music can convey a rather definite ideational content and is concerned with the human factors which determine the ability to comprehend these meanings." This ideational content was defined as "an extra-musical idea which is evoked by a musical representation. This idea may be in the form of depicted emotions or visualized pictorial representations."

The study included a comprehensive review and critique of earlier studies that had also been designed to measure the ideational factor. Barrett classified these studies into three periods: (1) before 1900--probed the possibility that music had a definite expressive quality; (2) 1900-1930--studied musical elements and their individual expressive qualities; (3) after 1930--used complete musical passages in order to discover why and how music conveys the ideational factor.

Construction and validation of instrument

The majority of 57 musical examples used in the development of the ideational perception test was selected from programmatic orchestral music. Only two examples were from nonprogrammatic music. Hevner's adjective wheel of descriptive possibilities was used to assure a cross-section of musical examples. The examples were chosen so that all of her eight groups were represented; each example represented only one basic musical idea.

As a first step in constructing the final testing instrument, the 57 musical examples were tape recorded and presented to 50 college freshmen at St. Cloud State College to obtain a basic vocabulary for use in the answers and decoys of the objective form of the test. These 50 students, representing a cross-section of non-music students, were asked to describe in one or two words the mood or projected picture of each musical example. The items were also presented to an adult jury of five college professors, not in music. From the answers of these two groups an objective multiple-choice test was constructed. This form of the test consisted of 30 musical examples. For each example there were five choices from which to choose the best descriptive term. The fifth was always "none of these" in order to eliminate the possibility of a forced choice. A sample question was provided.

Next the test was given to a group of 60 students in an effort to determine the order of difficulty of the examples and questions. A new sound tape was made with the order rearranged as determined by these test results.

The third factor, the degree of difficulty of the musical example, may have been detrimental to the effect of overlearning because of its influence on the quality of data obtained. Examination of the individual raw scores of the subjects reveals that many of them took only two trials to memorize the four measure selection and play it without mistakes. Many of these same subjects took only one trial at the two-week relearning position and again took only one trial at the four-week position to relearn the example and play it without mistakes. Since the example was obviously too easy for these subjects, the data obtained from them is questionable. Similarly, the .05 year trumpet player with little technique and little musical experience would need many trials to perform the example from memory. Unless the more proficient subjects were fully challenged by the musical example, the range of trial scores would not reflect the actual range in ability between the low and high groups.

Finally, the factor of the influence of relearning review on the overlearning effect at the four-week temporal position resulted from the author's desire to test the effect of overlearning at more than one temporal position beyond initial treatment. In so doing, the four-week scores represented the combined effects of the two-week relearning review required to obtain the two-week scores plus the effects of the initial 50 percent or 100 percent overlearning treatments given the two experimental groups. Thus, the overlearning effect was not isolated in the study. At one point in the study Mr. Becker suggested as a solution to this problem the omission of the two-week relearning review for those subjects of both experimental and control groups whose four-week scores were used. He rejected this solution because of its lack of precision within his experimental design, and because of his desire to test for the triple interaction of initial learning ability, overlearning, and temporal position. Another possible solution to the problem would be to employ overlearning treatments at several time intervals with corresponding relearning review for the control group. This control would also take into account the effects of normal musical growth, maturation and environmental influences, particularly so if matched ability groups or pairs were used.

By way of more general evaluation, this reviewer feels that Mr. Becker's interesting design and challenging topic point the way toward examinations in depth of overlearning. Replications should be of longer range and involve a variety of time intervals for treatments and observations. Various kinds of practice schemes, including silent study, should be employed. Several age levels should be involved, beginning, perhaps, with replications at the high school or college levels where musical learning is thought to take place more rapidly and thus be measured more readily. Other musical media should be involved including both instrumental and vocal performance, and there should be consideration of cultural and environmental influences as determined by socio-economic and geographical backgrounds. It is to be hoped that this exploration of the effect of overlearning, for which we are indebted to Mr. Becker, will be one of the beginnings of the development of a body of documented knowledge about musical aptitude and musical learning.

Footnotes

[1] Robert W. Lundin. "The Development and Validation of a Set of Musical Ability Tests," Psychological Monographs, 63:10 (1949).

[2] Paul R. Fransworth. "An Historical, Critical, and Experimental Study of the Seashore-Kwalwasser Test Battery", Genetic Psychology Monographs, 9:5 (1931), 291-393.

[3] Grace Rubin-Rabson. "Studies in the Psychology of Memorizing Piano Music: I-VII: A Comparison of Three Degrees of Overlearning," Journal of Educational Psychology, 32 (1941), 688-95.

The final form of the test was administered to a group of 285 freshmen enrolled in the fall quarter music humanities course. In addition to the Ideational Perception Test scores the following information was obtained from each student: Allport-Vernon Scale of Values scores; scores from a listening experience questionnaire which sought information about movie attendance, television viewing, concert attendance, classical record listening, and participation in a band or orchestra; California Test of Mental Maturity scores; information about the chosen field of study; and retest scores of the Ideational Perception Test. The usable number of cases, representing students with complete batteries of scores, was 229. The Ideational Perception Test was also given to a control group of 20 adult jury members, half of whom were music educators. If the opinions of this group were split, the responses of the music educators were accepted as correct.

During the winter quarter, Ideational Perception Test and retest scores and information about the chosen field of study were obtained from 303 college freshmen enrolled in the music humanities course. Of These 264 cases were usable. This group was designated as Group II. In the spring quarter, Ideational Perception Test scores and Allport-Vernon Scale of Values scores were obtained from Group III, a group of 42 randomly selected college freshmen.

The coefficient of reliability for the test was calculated by three methods: test-retest, split-half, and test of internal consistency. The reliability coefficient of the test was found to be .60; this Barrett considered adequate since his method of testing was involved with group responses.

To establish the validity of his test Barrett looked to the definition of validity as stated by Wert, Neidt, and Ahmann: the degree to which all kinds of errors, compensating and biased, are absent. Barrett then described examples of these two types of errors, showing how they were absent from his test. He admitted that failure to include an infinite number of items, a compensating error, was a defect of his test. The final form of the Ideational Perception Test included 30 items. Barrett sought further to establish the validity of the test by utilizing a panel of experts to control the choice of answers and by examining the scores of music students. He judged the validity to be adequate for the purposes of the study.

Treatment of data and findings of study

The Ideational Perception Tests were machine scored. All collected information was converted to numerical scores and statistically treated.

The results of Barrett's study may be summarized as follows:

1. The ability level of ideational perception did not improve between the test and retest of Group I. Group II did improve on the retest but only as high as the mean score of Group I.

2. No significant relationships were found to exist between the scores on the five areas of the listening experience questionnaire and ideational perception.

3. There was no evidence of relationship between a subject's IQ as measured by the California Test of Mental Maturity and his ability to perceive the ideational factor in music.

4. No relationship between the aesthetic, theoretical and religious areas of interest of the Allport-Vernon test and ideational perception was found.

5. Students whose chosen field of study was music made average scores of 80.41; the average score of the total group was 75.53.

6. On the basis of the evidence presented it was impossible to present a conclusive statement concerning the improvement of ideational ability.

7. Some positive degree of relationship between attitude toward music and the tested ability was found to exist.

Comments

Dr. Barrett's thesis represents one approach to the measurement of the factor of ideational perception. His Ideational Perception Test was carefully constructed and exists as a testing instrument for other music educators who might desire to replicate the study or to conduct further research into this area of musical response. His survey of related studies is quite extensive while his classification of these studies is helpful.

Of the three viewpoints from which Barrett set out to explore the factor of ideational perception the third--implications for teaching in a college general music appreciation class--seemed to be neglected. Perhaps this was because no conclusive statement concerning the improvement of ideational perception could be made on the basis of his findings.

It is the opinion of this reviewer that implications for the teaching of general music appreciation class should not come from students' varying abilities to perceive or not to perceive ideational content in music. Her opinion is that improvement in students' abilities to perceive ideational content is not a primary objective of a general music appreciation class. Rather she believes that the focus of this type of course should be upon the students' increasing awareness and intellectual understanding of the combined play of the elements of music as used by individual composers in the shaping of a significant musical form. She would like to suggest that studies in this area might produce fruitful findings from which implications could be drawn.

Baumann, Victor H. Teen-age Music Preferences. Reviewed by Joseph W. Landon. University of Southern California, 1958.

Coming as it does on the tenth anniversary of its completion, the findings of this doctoral study by Victor H. Baumann, even with the dated examples of "popular" music then in vogue, still represent some important conclusions and recommendations which should concern today's music educator. Perhaps even more interesting is the observation that even though this study was a forerunner of similar attempts to measure music preferences, very few have undertaken the rating of musical choices of teen-agers with such a degree of specificity.

Those who have been most directly connected with the educational process of adolescence may consider themselves blessed with a sixth sense of what is right and appropriate with regard to the musical fare presented to their young charges. Coupled with a workable knowledge of growth expectations and the best techniques culled from educational research and practice, the result may be educationally rewarding. The besetting problem is often less definable in practice than in theory, however. Confronted with problems created by the socioeconomic environment, prior educational exposure, plus a rather formidable frontal exposure to the vast variety of musical and pseudo-musical experiences provided expressly for teen-age markets, the teacher may end up playing "last fiddle" to the more appealing cultural milieu which lies outside of the school portals.

Speaking of the junior high school level, the recent report of the Tanglewood Symposium1/ emphasizes that not only should music education become involved with the why and how of music, but that it should have relevance to music of our times as well as to the music of the past. The significance of this statement is even more profound when one recognizes that this pronouncement has come not only from a blue ribbon group of musicians, music educators and lay persons but from such well-known persons in the popular field as Stan Kenton, Mike Stahl and Paul Williams. In addition to underscoring the need for placing music in the core of the school curriculum, these participants observed that "the arts afford a continuity with the aesthetic tradition in man's history...(which)...reach close to the social, psychological, and physiological roots of man in his search for identity and self-realization."2/ This parallels a concept enunciated four decades ago by John Dewey who pointed out that, "The moral office and human function of art can be intelligently discussed only in the context of culture."3/

Recent articles in the field of music education and in the aesthetics of music also provide some additional insight into the Baumann study. One of the most completely documented of these is the federally funded study regarding the musicality of junior high school students by George Kyme and associates at the University of California, Berkeley.4/ This study emphasized that music listening (including the type presumably incorporated by Baumann), when taught by a master teacher with a variety of visual and auditory media, is not totally effective at the junior high school level in developing musical sensitivity. Rather, it was observed that preferences in music, as well as the so-called attributes of musicality probably

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1/Judith Murphy and George Sullivan, Music in American Society (Washington: Music Educators National Conference, 1968), p. 60.

2/Ibid.

3/John Dewey, Art As Experience (New York: Capricorn Books, Inc., 1958).

4/George Kyme, A Study of the Development of Musicality in the Junior High School and the Contribution of Musical Composition To This Development (Berkeley: University of California, 1967).

are influenced most by performance and musical composition. Thus, it would be advisable for us to assume that the preferences as found by Dr. Baumann indeed were those which the student brought to the music class in terms of already developed bias. As such, we might conclude that these bias-preferences are capable of being modified much the same as any teen-age behavior is influenced by the formal educational process. It may be more important, however, to assume that the music educator should give more attention to the need for starting with these influences of teen-age society in a more meaningful approach to realizing the objectives of developing taste and musicality.

While further underscoring this premise, Kaplan points to a fundamental caution in which he emphasizes that one major issue that faces the profession is how to absorb and profit from these contemporary disciplines without leaning on them for its fundamental values within the school system.5/ This idea is further emphasized by the author in citing the new aesthetic values which have caused a literal upheaval in the commercial recording field. Today, the tastes of the under-20 age group both dominate and dictate essentially the direction of the output of this multimillion dollar industry. Music educators who suffer from the delusion that the classroom is the dominant influence in molding listening taste would do well to study these trends and the effect of the record market. Kaplan and Baumann seem to say that the classroom may be effective in creating teen-age listening attitudes but certainly not if both are diametrically opposed.

Thus, we must be aware both of the nature of aesthetics and how these values are transmitted in learning as well as the milieu of the school-society. In addition, it is important to understand the various changes in society which are having their effect upon the taste and discrimination of the nation as a whole.6/ A case for the complete revamping of the existing musical literature both of performance and general music classes for teen-agers may not be completely valid, provided that some provision for these influences is made. It is possible, however, that the real implication may point toward a wider variety of musical offerings at the secondary school level which are aimed at the divergent population of the comprehensive secondary school.7/ It would be well for the reader not only to consider studies of Baumann and Kyme, but to relate these to the aesthetic and sociological implications provided by Schwadron and Kaplan. A recent study of Evans8/ concerning designed music listening experiences on junior high school student's attitudes will also prove enlightening. In addition, it may be profitable to return to some of the earlier experimentation concerning the affective nature of man in relation to his music found in the writings of Seashore, Meyer, Mursell and Langer.

The Problem and Procedure

The problem of the Baumann investigation concerned the following four points:

1. To develop a device for sampling music preferences.
2. To discover what teen-age preferences are and how they vary at different ages.

5/Max Kaplan, Foundations and Frontiers of Music Education (New York: Holt, Rinehart and Winston, Inc., 1966), p. 46.

6/Abraham A. Schwadron, Aesthetics Dimensions for Music Education (Washington: Music Educators National Conference, 1967).

7/Music in the Senior High School (Washington: Music Educators National Conference, 1959).

8/Jesse Gillette Evans, Jr., The Effect of Especially Designed Music Listening Experiences on Junior High School Students Attitudes Towards Music (Bloomington: Indiana University, 1965)

3. To determine if teen-agers of different socioeconomic status develop different music preferences.

4. To verify or contradict results of music preference surveys using other methods of measurement.

The study, which was made during the 1955-56 school year while the author was a member of the faculty of Phoenix, Arizona, City College, was administered as a Music Preference Inventory to 1,600 teen-agers of Phoenix and Cumberland, Maryland, schools. Fifty selections which were listed in the Music Preference Inventory were chosen from the nominations of more than 600 teenagers, augmented by the judgments of 30 junior college music majors and leading music educators. The final survey instrument listed pop music, folk and traditional, classical and other music which had been identified by title by the three groups. The listing of these selections was determined entirely by chance. Subjects in the final administration of the MPI were asked to rate titles by marking them "Like Most," "Like" or "Like Least" after listening to the music without the benefit of title or type identification. A reliability correlation was made by having these same selections played and marked by 50 junior college students. Replaying and rescoring of the subjects revealed marked correlation coefficients of 0.90 for popular music, 0.93 for classical music, and 0.86 for traditional music. The choices, in rank order of preference, are shown in Table I.

A short Social Status Inventory, modified from the Harrison G. Gough Home Index[9] of socioeconomic status was administered to determine what effect this factor played in the musical preferences of the teen-age subjects. By means of coding the index reply form, respondents retained a certain degree of anonymity, although this information was available to the investigator who then correlated the socioeconomic factor with the subject's musical preferences. The Home Index utilized 25 true-false statements relating to home, material possessions, education of the parents, and participation in civic activities. Sex and age of the respondents were also noted with the latter tabulated within the brackets of ages 12-14, 15-17 and 18-20, respectively. Differences were noted by means of statistically significant chi-square tabulations.

Findings

By inspecting Tables II, III and IV, one notes that all groups preferred popular selections, with the current fad of rock and roll then exemplified (1955-56) by "Rock Around the Clock" heading the list among the younger teen-agers. At each succeeding age level, there was a corresponding decline in the preference for the popular idioms with an increase in liking of the classical selections. There were both sex and regional differences found between choices of boys and girls and the respondents from Arizona as contrasted with Maryland, respectively, although these differences tended to be more in degree rather than in kind. It was noted also that there was a statistically significant difference in the responses of high and low socioeconomic groups. Although the latter factor could not be said to be isolated sufficiently to yield consistently accurate information, it can be assumed that economic factors play an important role in musical experience outside of school, hence affect attitudes measurably. A rather surprising difference was noted between the low-status teen-agers whose tastes ran generally to traditional music to a greater degree than their high-status group contemporaries. Only the tunes "Buffalo Gals" and "Mexican Hat Dance" were found to be statistically significant. By contrast, the high-status group was found to have a definitely higher preference for classical selections.

9/Harrison G. Gough, "A Short Social Status Inventory," Journal of Educational Psychology XL, (1949), pp. 52-56.

All teen-agers heard their favorite music principally in their own homes, followed by the juke box, friend's home, and other less frequented locations. Of importance to the educator was the fact that formal music classes consituted a relatively unimportant place where their favorites were heard. The radio ranked first as a medium of listening, followed by the record player, of note is the fact that radios were most accessible to low-status teen-agers and that records were used by high-status students.

Of great interest were the findings of how teen-agers listened to music. A comparatively high number of responses from all respondents predictably showed that they listened when "it is mostly background for work, or study or play." More surprising, however, was the revelation that all groups indicated that they listened with their whole attention ranging from sometimes to often. This might seem to indicate that teen-agers are more attentive to music which they enjoy than casual inspection of some of their more outward listening habits might indicate.

Titles of the 50 selections which constituted the Music Preference Inventory of Baumann (Table I) probably present a fairly good indication of some of the top rated pop tunes during the period of the study. An inspection of these titles, however, leads one to believe that there may have been an element of built-in bias on the part of the examiner since it seems logical to assume that some of the performers, if not the selections themselves (notably Glenn Miller, Wayne King and Benny Goodman) were not at that time on the "Hit Parade." A similar question might be raised concerning the performances by Waring, Flagstad and Bjoerling in terms of best or most representative classical performances of the day.

Teen-age study of instruments was an interesting but probably relatively insignificant sidelight of the study. The only information which this revealed was to underscore the fact that the more privileged socioeconomic groups frequently provided private study of some musical instrument for their children, whereas the majority of the less favored families did not.

Conclusions

Seemingly predictable general conclusions were drawn by Dr. Baumann in pointing out the necessity for teachers in secondary schools to capitalize upon the fund of musical information and experience which teen-agers bring with them to the formal music class. Rather than conclude that all teen-agers prefer pop music, it seems important to note that there were also strong likes for many traditional and classical items on the MPI. Thus, instead of providing completely different musical experiences for differentiated groups, perhaps teachers should use survey devices to examine current student interests, avoiding extreme prejudices and capitalizing on strong points as an area of departure.

A most helpful device, according to Baumann, would be the availability of authoritative, clear definitions of musical categories. It was also pointed out that one of the problems is that whereas classical music utilizes fairly universal and recognized musical terms, other musical idioms frequently do not. Although inconclusive, there were some indications from which it might be assumed that it is quite possible that a strong case could be made for defining musical readiness levels For example, there may be a level when it is most beneficial educationally to introduce folk music rather than art songs: Bartok and Stravinsky rather than Mozart and Haydn.

Table I--The Fifty Selections of the Music Preference Inventory Ranked in Order of Popularity with 1,600 Teen-Agers

Rank	Title, Description, and/or Artist	Number Like most	 Like least
1	In the Mood, Glenn Miller Orchestra	1,263	50
2	Rock Around the Clock, Bill Haley and Comets	1,216	144
3	Boogie-Woogie, Tommy Dorsey Orchestra	1,091	122
4	San Antonio Rose, Western Guitar, Chet Atkins	962	181
5	In the Jailhouse Now, Webb Pierce	909	329
6	It Is No Secret, popular sacred, Foley and Andrews Sisters	877	149
7	Akaka Falls, Hawaiian guitar, Benny Kalama	863	121
8	Hesitating Blues, trumpet, Mugsy Spanier	848	211
9	The Waltz You Saved for Me, Wayne King Orchestra	835	85
10	"You'll Never Walk Alone" from Carousel, movie sound track	832	192
11	Wiener Blut, Walzer, Op. 354 by Strauss, Boston, "Pops"	805	195
12	The Hot Canary, popular violin, Florian ZaB	804	159
13	Away in the Manger, Fred Waring Chorus	754	109
14	Who? Benny Goodman Trio	753	242
15	"Heigh-Ho" from Snow White, London Symphonic Band	730	120
16	Those Foolish Things, Dave Brubeck Quartet	721	188
17	Washington Post, American Legion Band of Hollywood	705	160
18	Buffalo Gals, hoedown, Old Timers	693	344
19	Llegaste Tarde, mambo, Chuy Reyes Orchestra	672	335
20	Jersey Bounce, popular organ, Lenny Dee	650	247
21	Canadian Capers, ragtime, Joe "Fingers" Carr	641	232
22	Mexican Hat Dance, Mexican band	633	230
23	23° N--82° W, Stan Kenton Orchestra	585	398
24	Oh! Susanna, Fred Waring Chorus and Orchestra	578	200
25	Deep River, Tuskegee Institute Choir	565	314
26	Love Letters, The Strings of Stordahl	559	384
27	River, River, Peggy Lee and Gordon Jenkins Orchestra	555	259
28	"Hallelujah Chorus" from the Messiah by Handel	481	343
29	Israel, cool jazz, Miles Davis, et al.	479	414
30	Goodbye, Old Dixie, Goodbye, Barbershop Quartet	451	311
31	Symphony No. 5 in C Minor by Beethoven (opening phrases)	434	585
32	"Procession of the Nobles" from Mlada by Rimsky-Korsakov, American Symphonic Band of the Air	360	541
33	Symphony No. 1 in C Minor by Brahms, fourth movement	381	517
34	Revolutionary Etude by Chopin, Goldsand	394	719
35	Serenade for Strings in C Major by Tschaikowsky	339	455
36	Anecdote No. 2 by Segovia, classical guitar, Almeida	294	472
37	Concerto for Violin in E Minor by Mendelssohn, last movement	274	648
38	"Menuetto" from Clarinet Quintet in A Major by Mozart	272	764
39	Appalachian Spring, by Copland	269	648
40	The Afternoon of a Faun, by Debussy	255	648
41	"Liebestod" from Tristan and Isolde, Kirsten Flagstad	241	726
42	"I Am the Monarch of the Sea" from H. M. S. Pinafore	229	692
43	Toccata and Fugue in D Minor, by Bach (fugue section), organ	222	690
44	Matona, Lovely Maiden, madrigal by de Lassus	161	802
45	Petrouchka, by Stravinsky (piano theme)	150	922
46	The Frog Went Courting, sung by John Jacob Niles	144	937
47	Die Fledermaus by Strauss (soprano and tenor duet)	142	1,063
48	Die Forelle, Op. 32 by Schubert, Bjoerling	134	997
49	"The Burning Tapers" from Lucia, Lily Pons	88	1,234
50	Quartet No. 5 by Bartok, Finale	64	1,188

Table II.--Percent of Three Age Levels Marking "Like Most" for *MPI* Popular Music Selections

	Boys			Girls		
	Age			Age		
Title	12-14 N=245	15-17 N=345	18-20 N=109	12-14 N=267	15-17 N=323	18-20 N=121
Those Foolish Things--Brubeck	41	38	48	44	47	49
The Waltz You Saved for Me	45	41	43	61	55	66
In the Jailhouse Now	77	70	33	73	55	32
River, River	22	23	34	38	47	42
Israel (contemporary jazz)	32	25	30	36	31	26
Boogie-Woogie	69	66	60	86	75	56
In the Mood--Glen Miller	75	79	78	90	83	74
You'll Never Walk Alone	29	36	56	54	67	83
"Heigh-Ho" from *Snow White* (band)	53	36	40	60	43	49
Akaka Falls (Hawaiian guitar)	61	50	32	72	53	50
Rock Around the Clock	92	85	53	94	83	50
It Is No Secret	61	46	41	74	58	55
Who?--Benny Goodman Trio	57	46	44	55	45	37
Llegaste Tarde, mambo	47	33	29	62	52	28
23° N--82° W--Stan Kenton	40	30	38	49	38	26
Love Letters (string orchestra)	19	17	38	35	44	59
The Hot Canary (violin)	53	46	52	57	53	60
Jersey Bounce (organ)	44	30	25	55	45	37
Canadian Capers (ragtime piano)	48	39	38	48	37	28
Hesitating Blues (trumpet)	56	46	54	58	54	51

Table III.--Percent of Three Age Levels Marking "Like Most" for *MPI* Traditional Music Selections

	Boys			Girls		
	Age			Age		
Title	12-14 N=245	15-17 N=345	18-20 N=109	12-14 N=267	15-17 N=323	18-20 N=121
Goodbye, Old Dixie, Goodbye	29	29	31	32	21	32
Deep River (chorus)	27	23	40	36	38	54
Oh! Susanna	54	36	29	49	29	27
Washington Post, march	51	36	32	62	41	36
I Am the Monarch of the Sea	5	6	17	17	18	23
Away in the Manger	41	29	36	62	52	62
Buffalo Gals, hoedown	57	44	34	59	41	29
The Frog Went Courting	19	7	8	15	4	2
Mexican Hat Dance	50	33	33	58	34	23
San Antonio Rose (guitar)	72	64	52	76	61	45

Perhaps the strongest implications which this reader gathered indicate that familiarity with any musical idiom is the most important single ingredient affecting musical preference. Whereas it can be argued with some degree of authority that it is well to begin any study of music with roots in the contemporary idiom, this does not negate the importance of providing many vital, participatory experiences with any kind of music. In addition, familiarity with any category of music leads to greater understanding and appreciation. There are also strong indications that young persons who perform as well as consume music are more perceptive to intrinsic musical values than those whose exposure is relatively more passive. Just possibly this indicates that not only is there a need for various types of musical experiences (including some type of performance) in the general music class, but also that much can be done to make music come alive in performance groups under the direction of a preceptive teacher

In the opinion of this reviewer, there is a great deal to merit the attention of music educators who are concerned with the effect of teen-age attitudes in the Baumann study. It will be interesting to see if the results of more recent preference inventories will reveal corresponding data and conclusions.

Table IV.--Percent of Three Age Levels Marking "Like Most" for *MPI* Classical Music Selections

	Boys			Girls		
	Age			Age		
Title	12-14 N=245	15-17 N=345	18-20 N=109	12-14 N=267	15-17 N=323	18-20 N=121
"Halleluja Chorus" from *Messiah*	15	17	34	31	41	60
The Burning Tapers (coloratura)	4	5	6	3	7	7
Concerto for Violin, Mendelssohn	12	12	20	11	19	30
Symphony No. 1, Brahms	11	14	30	18	28	42
"Menuetto, *Clarinet Quintet*, Mozart	8	14	17	12	20	26
"Duet" from *Die Fledermaus*	4	4	12	9	11	17
Serenade for Strings, Tschaikowsky	12	13	25	15	25	41
Symphony No. 5, Beethoven	17	22	35	18	28	48
Toccato and Fugue, Bach (organ)	7	7	16	15	17	27
String Quartet No. 5, Bartok	3	5	6	3	4	2
The Afternoon of a Faun, Debussy	10	7	24	11	24	26
Matona, Lovely Maiden (madrigal)	4	5	15	10	14	17
"Liebestod" from *Tristan and Isolde*	21	11	17	19	12	17
Appalachian Spring, Copland	10	11	22	14	20	25
Die Forelle, Schubert	7	5	10	9	8	12
Revolutionary Etude, Chopin	11	15	32	19	35	47
Procession of the Nobles (band)	22	19	29	19	23	27
Anecdote No. 2, Segovia (guitar)	13	13	27	17	21	25
Wiener Blut, Walzer, Strauss	36	32	40	60	59	74
Petrouchka, Stravinsky	9	5	9	8	9	15

Table V.--Comparison of Ratings Made by Balanced[1/] Low and High Teen-Age Socioeconomic Groups for MPI Popular Music Selections

Title	Low Status 100			High Status 100		
	Like least	Like	Like most	Like least	Like	Like most
Those Foolish Things--Brubeck	12	55	33	9	41	50
The Waltz You Saved for Me	2	56	42	5	35	60
In the Jailhouse Now	14	16	70	18	27	55
River, River	12	54	34	15	49	36
Israel (contemporary jazz)	23	53	24	24	46	30
Boogie-Woogie	5	29	66	9	20	71
In the Mood--Glenn Miller	4	24	72	5	14	81
You'll Never Walk Alone	18	47	35	12	35	53*
"Heigh-Ho" from Snow White	8	54	38	10	36	54*
Akaka Falls (Hawaiian guitar)	7	29	64	4	45	51
Rock Around the Clock	6	15	79	6	21	73
It Is No Secret	7	32	61	9	40	51
Who?--Benny Goodman	16	45	39	11	36	53
Llegaste Tarde, mambo	18	39	43	24	45	31
23° N--82° W--Stan Kenton	23	41	36	20	46	34
Love Letters (string orchestra)	36	33	31	16	41	43**
The Hot Canary	12	37	51	10	39	51
Jersey Bounce	14	41	45	17	49	34
Canadian Capers (ragtime piano)	13	56	31	15	39	46*
Hesitating Blues (trumpet)	10	48	42	16	26	58**
Totals	260	804	936	255	730	1,015*
Percent of totals	13%	40%	47%	13%	36%	51%

1/Balanced as to: number, age, sex, and musical training.
*Significant at the five percent level of confidence.
**Significant at the one percent level of confidence.

Table VI.--Comparison of Ratings Made by Balanced[1/] Low and High Teen-Age Socioeconomic Groups for MPI Traditional Music Selections

Title	Low Status 100			High Status 100		
	Like least	Like	Like most	Like least	Like	Like most
Goodbye, Old Dixie, Goodbye	19	53	28	12	59	29
Deep River (chorus)	25	52	23	21	44	35
Oh! Susanna	15	43	42	9	52	39
Washington Post, march	9	50	41	9	52	39
I Am the Monarch of the Sea	47	39	14	47	36	17
Away in the Manger	3	44	53	13	43	44
Buffalo Gals	12	31	57	22	41	37*
The Frog Went Courting	54	41	5	55	38	7
Mexican Hat Dance	10	42	48	19	55	26**
San Antonio Rose (guitar)	8	25	67	10	34	56
Totals	202	420	378	217	454	329
Percent of totals	20%	42%	38%	21%	46%	33%

1/Balanced as to: number, age, sex, and musical training.
*Significant at the five percent level of confidence.
**Significant at the one percent level of confidence.

Table VII.--Comparison of Ratings Made by Balanced[1] Low and High Teen-Age Socioeconomic Groups for MPI Classical Music Selections

Title	Low Status 100			High Status 100		
	Like least	Like	Like most	Like least	Like	Like most
"Halleluja Chorus" from Messiah	25	51	24	22	47	31
The Burning Tapers (coloratura)	79	19	2	70	24	6
Concerto for Violin, Mendelssohn	46	41	13	31	53	16
Symphony No. 1, Brahms	48	33	19	26	52	22**
"Menuetto," Clarinet Quintet, Mozart	56	30	14	50	35	15
Serenade for Strings, Tschaikowsky	46	37	17	32	49	19
Symphony No. 5, Beethoven	46	33	21	34	35	31
Toccata and Fugue, Bach	52	41	7	43	41	16
String Quartet No. 5, Bartok	72	23	5	78	19	3
The Afternoon of a Faun, Debussy	49	36	15	38	43	19
Matona, Lovely Maiden	49	40	11	55	34	10
"Liebestod" from Tristan and Isolde	46	41	13	37	51	12
Appalachian Spring, Copland	48	43	9	38	47	15
Die Forelle, Schubert	63	30	7	53	36	11
Revolutionary Etude, Chopin	78	15	7	59	29	12*
Procession of the Nobles (band)	34	49	17	33	46	21
Anecdote No 2, Segovia	26	52	22	27	53	20
Wiener Blut Walzer, Strauss	18	41	41	13	35	52
Petrouchka, Stravinsky	56	39	5	51	36	13
Totals	1,007	721	272	844	802	354**
Percent of totals	50	36	14	42	40	18

[1] Balanced as to: number, age, sex, and musical training.

*Significant at the five percent level of confidence.

**Significant at the one percent level of confidence.

Becker, William Robert. The Effects of Overlearning, Initial Learning Ability and Review Upon the Musical Memory of Junior High School Cornet and Trumpet Players. **University of Iowa, 1962**

Reviewed by A. Oren Gould

Introduction

Music educators are becoming increasingly interested in research which attempts to determine the effects of environmental influences on musical aptitude. From the time of the experiments of Carl Seashore in 1915 to the recent studies of R. M. Drake, standardized tests, constructed to measure musical aptitude, have been based on the theory that musical aptitude is hereditary and innate. Lundin[1], Farnsworth[2], and others, however, believe that there is evidence that ability to perceive elements of music is at least partly a product of environment and culture. They hold that there is a genuine need for long-range and systematic examination of many aspects of musical perception, and that these investigations should be focused on gathering evidence of influence of training, practice, and other environmental factors on so called native musical ability.

This study seeks to determine the effect of training on the ability to retain music. Although the author does not say so, it would seem that the aspect of musical aptitude, musical memory, was chosen because of its treatment as the most important function of musical aptitude in the Seashore Measures of Musical Talent, the Kwalwasser-Dykema Music Tests, the Drake Musical Aptitude Tests, and many if not all similar "tests of musical talent".

The particular aspect of training chosen for the study by Mr. Becker is called overlearning. Overlearning is described by psychologists as the practice of a response beyond the point of initially learning it. In the field of psychology, the literature dealing with overlearning is in agreement that overlearning aids in the retention of the response. Applied to musical learning, overlearning would be the continued practice of a musical selection (or other musical response) after it has been learned. For Mr. Becker this means initially memorizing a musical selection, then continuing to repeat the performance of it for a specified number of times in the hope that the additional repetitions will improve retention of the selection at a later date.

Mr. Becker does not presume to claim for his study promise of any colossal break throughs in theory and practice in music education, but perhaps he is too modest. There are several reasons why experimental work with musical aptitude has potential contributions of great significance for music educators, musicologists, psychologists, and all concerned with musical learning. In the first place, support of the contentions of Lundin, Farnsworth and others that musical aptitude is at least partly the product of experience and training would tend to raise serious questions as to the validity of most if not all of the measures of musical talent because of their consistent orientation to the theory of innate musical ability.

Objective evidence of environmental influence, in the second place, would have profound effect on current practices of prognosis of success in music. Third, a need would be created for new approaches, new methods, new materials in music education at all levels to replace such current practices and materials as are oriented to the hereditary theory of musical talent. Inquiry into the nature of musical aptitude could be, presently, the most basic of all research efforts involving musical learning. Mr. Becker's study of factors affecting the retention of music, therefore, is timely and significant.

The Problem

The problem, as presented in Mr. Becker's introduction, was to determine the effects of practice beyond the point of initial mastery (called overlearning) on the retention of memorized music. Mr. Becker recognized, however, the difficulty of isolating the treatment of overlearning as a variable unaffected by the initial musical learning ability of the subjects. He saw also that relearning review required for testing various amounts of overlearning at subsequent time intervals would further affect any measure of the pure effect of the variable of overlearning on the musical memory of the experimental subjects. For these reasons, in the actual delineation of the problem we find it stated as an attempt to measure the overall triple interaction of the effects of overlearning, initial learning ability, and relearning review, and to examine the effects of each of these factors individually upon the musical memory of the subjects of the experiment. To a degree, the problem as stated represented a replication of a series of studies by Rubin-Rabson[3] who investigated the effects of various amounts of practice and silent study beyond initial memorization with adult piano students. In these studies no statistically significant effect of overlearning on ease of relearning was noted. Mr. Becker stated, however, that the lack of statistically significant results was not conclusive evidence that no such effects existed beyond the precision and limitations of the Rubin-Rabson experiments. He hypothesized that overlearning would be found to be of significant value for the retention of music within his proposed experimental situation. Specifically he sought answers to the following questions:

1. Given various amounts of practice beyond the point of mastery, how would subjects compare in their ability to relearn a musical selection at later dates?

2. Does relearning depend on the level of ability of the subjects?

3. If overlearning has any effect on ease of relearning, is that effect identical for above-average, average, and below-average students?

4. Is the ease of relearning after four weeks affected by relearning which occurs after two weeks?

5. If overlearning has any effect on ease of relearning, is the effect reflected as strongly after four weeks as it is after two weeks?

Procedures

Eighty-four seventh and eighth grade trumpet and cornet students were selected "at random" from 15 junior high schools in Iowa. Each of these students was asked to memorize a four measure musical example. The number of playing trials required by each subject to achieve initial mastery (memorized performance without mistakes) of this musical phrase was recorded and used as a basis for dividing the 84 subjects into three groups according to initial learning ability: above average, average, and below average. Those subjects who achieved initial mastery in 2 or 3 playing trials were assigned to the above-average group; those requiring 4, 5, or 6 trials were placed in the average group; and those requiring 7, 8, or 9 trials made up the below-average group. Approximately one-fourth of the total group was classified as above average, one-half as average, and one-fourth as below average in initial learning ability. Within each of these three classifications one-third of each group was designated as a control group and received no overlearning treatment. Of the remaining two-thirds of each ability group, one-third received 100 percent overlearning treatment. (The process of 100 percent overlearning was described as a repetition by the trumpet playing subject of the exact number of times the musical example had been played in the initial process of memorizing it. That is, if a subject had played the phrase eight times in memorizing it, he played it eight more times for his 100 percent overlearning treatment.) The remaining one-third of each ability group received 50 percent overlearning--half as many repetitions as initial mastery had required.

All subjects (both control and experimental groups) relearned the musical phrase after two weeks to the point of perfect memorized performance, and the number of playing trials required was recorded for each. After four weeks the musical phrase was relearned a second time by all subjects and the numbers of playing trials required were again recorded. After the initial overlearning treatments no further overlearning treatments were administered to the groups which had received initial treatments of 50 percent and 100 percent. Mr. Becker pointed out that the learning trial scores obtained by all subjects at the four-week temporal position represented the effects of the two-week relearning review and that in the case of the experimental subjects the scores represented the interactive effects of initial learning, 50 percent or 100 percent overlearning treatment and two-week learning review.

Mr. Becker's data, therefore, consisted of scores representing the numbers of playing trials taken by each subject in the process of initial mastery, in relearning after two weeks, and in a second relearning process after four weeks. Three groups of scores represented the three matched learning ability levels. Each of these groups of scores was divided into three sub-groups representing the control groups which received no experimental treatment, the 50 percent overlearning group, and the 100 percent overlearning group. The three-dimensional grouping of the data was completed by a further grouping of each sub-group into measures of temporal positions of relearning after two weeks and relearning after four weeks. Additional data were presented as a by-product of the study. This consisted of each subject's score on the Iowa Basic Skills Test, his intelligence test score, and his number of year's playing experience on the trumpet. Correlations between the scores of each test category and the scores of initial learning trials were computed.

For evaluating the data a three dimensional factorial design was used to test the data for interactions and effects of overlearning, initial learning ability, and the two temporal positions of relearning beyond the mastery trials and overlearning treatments. Analysis of variance also was employed between groups and within groups to test the interactive effect of each of the three variables (initial learning ability, overlearning, and the two temporal positions of relearning) on each of the other variables with the third variable excluded. The .05 level of confidence was employed for each test of significance.

Results and Conclusions

Analysis of variance between groups and within groups for relearning after two weeks and after four weeks revealed that triple interaction of the three factors of the experiment was not significant (.05). Similarly, analysis of variance of the double interaction of the factors of overlearning and initial learning ability was not found to be significant. In each instance the null hypothesis applied to the presence of effects of overlearning could not be rejected. On the other hand, the double interactions of initial learning ability and relearning at the two-week and four-week positions were found to be significant, and significant differences were noted between the levels of initial learning ability in relation to the temporal positions of relearning. Significant correlations were noted between initial learning ability, the Iowa Basic Skills scores, the intelligence scores and the years of playing the trumpet. From his analysis of these observations, the author drew the following conclusions:

1. No significant evidence was found in this study to support the belief that overlearning of musical material facilitates its recall at a later date.

2. The ease of relearning is dependent upon the level of subject learning ability as determined by initial learning trials. Above-average subjects relearned with greater ease than average subjects, and average subjects relearned with greater ease than below-average subjects.

3. There is no evidence that the effects of overlearning are different for above-average, average, and below-average subjects.

4. Relearning scores after four weeks were significantly improved by the review which occurred at the two-week relearning position. Review improved the relearning scores of the below-average subjects significantly more than the relearning scores of average and above-average subjects.

5. The effect of overlearning upon relearning scores was no different after four weeks than it was after two weeks.

Mr. Becker did not rule out entirely the presence of some effects of overlearning, as the above conclusions would seem to indicate. Although not found in statistically significant amounts in this experiment, there was sufficient evidence of the presence of its effects to warrant further investigation. Some of his suggestions for further research included examination of the effects of silent drill beyond the criterion of mastery on retention of music and the comparison of the effects of overlearning using different types of music. He asked the question: "Is efficient memorizing on a musical instrument a matter of experience, motor reflexes, or physical coordination?" Further suggestions included comparing playing trials and silent learning in a factorial design, and a comparison of the effects of review at various levels of learning ability. Finally, he offered the conclusion that the results of his study indicated possible further research which examines the effects of varying degrees of review employed "to determine more efficient methods of prolonging retention of music material."

Comments

As was pointed out in the introductory paragraphs of this review, Mr. Becker's topic is both timely and significant. Its value is primarily that of a pilot study, and as such, it effectively points the way for extensive future investigation. It is worthy of careful study by all who are contemplating experiments in musical perception and musical learning.

However, this reviewer is not convinced that Mr. Becker's hypothesis (that overlearning is of significant value for the retention of music) could not be documented. If the experiment had been designed for the purpose of measuring the effect of the single variable of overlearning, several factors could have received different treatment with, perhaps, significant results. The factors are: the differences in the ages and maturity of the subjects, the differences in training and experience of the trumpet playing subjects, the degree of difficulty of the musical example, and the influence of relearning review on the overlearning effect at the four-week temporal position.

The first two factors can be discussed together because the age-maturity and the experience-training on the trumpet would contribute to the playing proficiency of the subjects. Playing proficiency would certainly influence the ability of the subjects to memorize the musical example initially and also to reproduce the recalled version of it at a later time. Although ages were not given, the subjects were described as seventh and eighth graders. This means a difference of a year or more in age, with the corresponding wide range of maturity typical of this age level. Playing experience of the subjects ranged from .05 years to 6.5 years. The amount and kind of experience was not described, but it would undoubtedly vary from no instruction to class lessons to private lessons. If gains in ability to produce a memorized performance of the musical examples are to be measured, the differences in memorizing ability on the trumpet of the subjects should be equalized. In this experiment an analysis of covariance employing as the control measure a pretest of ability to memorize on the trumpet could be used (this could be the initial trial scores). The final scores of the playing trials could then be adjusted (equalized) in terms of differences in ability to memorize on the trumpet as indicated by the covariate (pretest scores).

Benner, Charles E. The Relationship of Pre-service Measures to Ratings of Music Teaching Success.* Ohio State University, 1963

Reviewed by John B. Fosse

The review of this study is broken into two main sections: (1) a Summary of the factual information including the plan of the study, the procedures, and the statistical results and (2) the Critique of the more subjective aspects including the review of related literature, selection of the criterion variable, selection and use of statistical techniques, and conclusions and recommendations of the study.

I. Summary

Procedures. The purpose of Dr. Benner's study was to investigate the relationships between: (1) an in-service rating of the subjects as music teachers (the criterion variable) and (2) the subjects' grade-point averages in ten selected undergraduate areas as well as their percentile rank on the Ohio State Psychological Test (the predictive variables).

The final sample of subjects was composed of 100 graduates of Ohio State University who had received bachelor of science degrees in music education between 1958 and 1961. Thus, at the time of the study, they had taught between one and four years. Each subject completed an In-Service Teaching Report, detailing when and where he had taught, the subjects and grade levels taught, and the names of his administrative superiors.

The administrative officers named on the subjects' In-Service Teaching Report(s) were contacted and requested to complete a Teaching Success Rating Form on the subjects. The rating form was composed of a 12-point scale (grouped in four major divisions) plus a free response section. Ratings were obtained from two administrators for each subject:[1] either the music supervisor and principal(s) of the building(s) in which each subject taught, or the subject's principal and superintendent.

Dr. Benner tested 11 null hypotheses. In condensed form, they were, that there were no significant positive correlations between the in-service music teaching success rating[2] and:

1. Student teaching grade-point average[2]
2. Music education methods grade-point average
3. Applied music major area grade-point average
4. Music theory sequence grade-point average
5. Music history sequence grade-point average
6. Conducting sequence grade-point average
7. Keyboard proficiency sequence grade-point average
8. Minor instrument sequence grade-point average
9. Professional education sequence grade-point average

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10. Undergraduate cumulative grade-point average

11. Percentile rank on the Ohio State University Psychological Test

The method adopted for testing the hypotheses was to compute correlations between each grade-point average (or percentile rank) and the criterion--the teaching success ratings.[2]

Findings. In Table 1 the correlations between the criterion of success and the predictive variables (listed in Column 1) are found in Column 2. The significance level of each correlation is located in Column 3. The correlations between the predictive variables and the criterion vary (ignoring the signs) from r = .002 to r = .294: only three of these are significant at the five percent level (p = .05). On the basis of a significance level of five percent, all except these three null-hypotheses (Nos. 1, 2, and 9) were not rejected.

II. Critique

Statistical methods. First, several references are made to "evidences of proof or disproof" of the null-hypotheses. Null-hypotheses are not proved or disproved--they are rejected or not rejected. This unfamiliarity with statistical conventions is further indicated by the use of reliable and valid (in Chapters I and II) as if they were synonymous. Additionally, the statement if made (on p. 51) "That these correlation coefficients are somewhat less than +1.00 leaves room for the conclusion that superintendents and principals do not base their judgments on identical values." It must be pointed out that correlation coefficients indicate the degree of association, they do not indicate to what extent the raters (in this case) were utilizing the same values or quantification of values.

Several tables were presented summarizing the teaching experience of the subjects. Notable was the rather severe attrition among the graduates: by the completion of the fourth year of teaching, only 38.7 percent of the degree grantees were teaching music. Unfortunately, the data was not broken down by sex, neither was it tested, perhaps using chi-square, to determine if the observed (severe) attrition rate was statistically significant. As part of this presentation Table 5 (p. 44) presented data on the relationship between undergraduate training (keyboard, vocal, or instrumental emphasis) and teaching assignment (vocal only, vocal-instrument, or instrumental only). It was not possible, from the table, to determine: (1) if there was a sex factor operating or (2) where the (apparent) movement of teaching assignment occurred. Nor was it warranted to draw the conclusion from the table that, "music teachers who remain in teaching gravitate...toward the area of music teaching in which they have major competence or major interest." (p. 43)

In Table 23 (p. 81), Benner listed the 11 variables[2] included in Table 1 of this review in the rank order of their correlation coefficients with the criterion. In Table 1 it may be observed that some of the correlations are positive and some are negative. In abbreviated form, the order in which Dr. Benner ranked the correlations may be seen in Column A of Figure 1, that is, the correlations are ranked from most positive to least positive to most negative. Technically, this is incorrect. The correlations should have been ranked in absolute numerical order (i.e., without regard to sign). Ranked in this way, the order of the correlations would have been as shown in Column B of Figure 1. The reviewer surmises that the author wished to indicate the "positiveness" of the correlations; a footnote indicating this intention would have been welcome.

In Table 24 (p. 84) Dr. Benner compared the subjects' student teaching grades with their first-year in-service success ratings to determine the relationship. The data were presented as frequencies and percentages; however, no statistical tests were applied. Therefore, the author's conclusion that "for any individual teacher the student teaching grade is an indeterminate predictor of teaching success..." is unwarranted.

General comments. Dr. Benner investigated a total of 16 variables using 100 subjects--a total of 1,600 bits of raw data were involved in the computations of the correlation coefficients. These data should have been reported either as a machine print-out or in typewritten form. This is not a question of doubting the accuracy of the author's coefficients, but rather to make these data available to future researchers.

In the Recommendations for Further Research, Benner asks whether "combinations of pre-service measures yield higher correlations with teaching success, and, consequently, hold higher predictive value?" (p. 104) The reviewer wonders why the author did not submit these data to multiple-correlation techniques, since he had the computer facilities at Ohio State available to him.

Another omission was Dr. Benner's failure to report or comment in the text body on the data in the intercorrelation table in Appendix C of the dissertation. This table included all correlations among the predictive variables and the criterion variable (N.B.--see footnote 2). Table 1 contains some of the unreported data from Appendix C of the dissertation. In Table 1 the number of the variable with which each variable had its highest correlation is in Column 4; the correlation coefficient is in Column 5; and the significance level is in Column 6. Thus, Variable I--Student Teaching Grade-Point Average--had its highest correlation with Variable 9--Professional Education Sequence Grade-Point Average ($r = .634$), significant at better than the one percent level.

It will be observed that the grade-point averages in student teaching, music education methods, conducting, and minor instruments correlate most highly with the professional education sequence G.P.A.; while the grade-point averages in the applied major, theory, and history sequences correlate most highly with the over-all undergraduate G.P.A. While acknowledging that these correlations are not independent measurements (i.e., the undergraduate G.P.A. "contains" the course grades that correlate highly with it), it is still interesting to note that two basic groupings of correlations exist--the "education" group and the "academic-music" group. Before continuing with this analysis, however, it is necessary to examine another aspect of the dissertation: Dr. Benner's review of related research and his selection of the criterion variable.

The literature pertaining to teacher effectiveness--both studies and philosophic writings--is immense. If all studies of teaching effectiveness (in all areas) are pooled, the total number--from 1930 to the present--may lie somewhere between 1,000 and 2,000, or higher. The crux of the problem caused by this bounty is that the researcher must: (1) develop (or adapt) a classificatory system for dealing with various criteria of "effectiveness" and classes of "predictive" variables and (2) present his review of the previous research in such a manner as to be representative and unbiased. In this study, neither was done. The review of the literature consisted of: (1) the mentioning of about five (annotated) bibliographies dealing with teacher effectiveness studies; (2) about six or seven references to (or citations from) writings dealing with the philosophy of teaching effectiveness (some of these might be placed in the first category); and (3) citations from (or references to) seven studies of teaching effectiveness. The paucity of references was compounded by what appeared to be a bias in the author's selection of quotations. Dr. Benner failed to delineate and emphasize the unresolved gap (if not conflict) between researchers utilizing some form of rating of the teacher (by pupils, peers, outside experts, or administrative superiors) as the criterion of effectiveness, and those utilizing some measure of pupil gains as the criterion variable. Instead he implied that a consensus of the validity of using ratings had been agreed upon among experts.

An awareness and acknowledgement of this conflict is crucial to the rationale behind criterion selection, since whatever *ratings* and *pupil-gains* are measuring, they do not seem to be measuring the same thing. Numerous studies have found *low* or *negative* correlations between student-gains and various ratings by administrators or experts. The reviewer is not quarreling with the *measurement* selected as the criterion, but with the author's reasoning behind the selection and his labeling of the criterion as a *measurement of successful teaching*.

Benner stated (p. 32) "Operationally, the teacher is successful to the extent that he is perceived to be successful by those who officially exercise evaluative judgments," and also (p. 101) "The extent to which student teaching grades correlate with ratings of... success depends on what similarity of values are held by those who evaluate student teaching and those who evaluate teaching success." Keeping these statements in mind and referring to the groups of correlations (education and academic-music) in Table 1, it may be asked, "What common factors may be operating in student teaching grades, music education course grades, and ratings of success?" Gowan[37] has suggested that:

> When an authority figure rates a group of subordinates on a certain variable, his rating will be more highly correlated with the patterns of identification established by his value system than with the actual variable itself.

Since many college faculty members of music education departments and most school administrators have taught in the public school classrooms, they may have common personality patterns. If so, the correlations obtained in this study might indicate nothing more than this commonality of personality--and of value systems. Again, the reviewer is not disagreeing with what Dr. Benner found, but with his lack of interpretation of the findings in view of the body of previous research.

In terms of the design of the study, the author seemed to be ignoring some of the most commonly used control variables. There was no attempt to break the data into groups by sex, school size, social-economic status of the subjects' teaching environments, or type of teaching assignment (with the exception of the previously mentioned tables comparing experience and teaching assignment).

In summation, this study was quite weak. It combined a scanty review of the previous related research with abbreviated statistical procedures and as a result contributed little to furthering our knowledge about the whole complex called teaching effectiveness.

Although the dissertation was clearly written, it contained a number of errors: missing underlinings in footnotes; two tables transposed; and a fluctuation in the order of presentation of the data associated with the variables. A more serious error was the transposition of two correlation coefficients (top of p. 99) in the report of the findings in Chapter VI.

Table 1 --Condensed Listings of Predictive and Criterion Variables, Correlation Coefficients, and Significance Levels[27]

Variable	Correlation with criterion	Significant level	Number of variable with highest correlation	Highest correlation	Significant level
1. Student teaching	.283	.01	9	.634	.01
2. Music education methods grade-point average	.250	.05	9	.732	.01
3. Applied major grade-point average	.105	N.S.	10	.518	.01
4. Theory sequence grade-point average	.075	N.S.	10	.728	.01
5. Music history grade-point average	-.002	N.S.	10	.695	.01
6. Conducting grade-point average	.128	N.S.	9	.566	.01
7. Keyboard professional grade-point average	.125	N.S.	8	.658	.01
8. Minor instrument grade-point average	.154	N.S.	9	.766	.01
9. Professional education grade-point average	.294	.01	10	.835	.01
10. Undergraduate total grade-point average	.177	N.S.	9	.835	.01
11. Ohio State University psychological test percentile rank	-.134	N.S.	10	.506	.01
12. Success rating	--	--	9	.294	.01

Figure 1 --Condensed Example of Ranked Correlation Coefficients

Column A	Column B
.294	.294
.123	-.134
.105	.128
-.134	.105

Footnotes

1. The criterion score representing the success rating was derived by averaging the two scores. Benner did not specify how scores were averaged for subject who had taught in more than one school system.

2. The study utilized both gross (four-point) values and precise (12-point) values for the student teaching grade-point average, the first year of teaching success rating, and the total teaching success rating. Thus, each of these variables was tested in two forms of quantification--gross and precise. The reviewer cites, in Table 1 of the review, only data associated with the gross student teaching grade-point average and the gross total teaching service rating. (The correlation coefficient between the precise forms of these two variables was r = .306, significant at the one percent level.) In effect, this means that all the correlations reported in Table 1 were between gross scores.

3. J. C. Gowan, "Prediction of Teaching Success: Rating by Authority Figures," California Journal of Educational Research, VI, (September 1955), p. 151.

Bergan, Hal Arthur. A Study of Drop-outs in Instrumental Music in Five Selected Schools in Michigan.* Michigan State University, 1957

Reviewed by Jack Pruitt

Introduction

Mr. Bergan was concerned with the large number of students who drop out of high school instrumental programs before the "satisfactions" to be received from this facet of music education are realized. According to the author, the tremendous attrition rate among high school instrumental students precludes implementation of the educator's efforts to prepare students for the greater amounts of leisure time from current trends of our culture.

The Problem

The purpose of the author's study was to identify the reasons given by students for discontinuing instrumental music before the completion of their school course. The problem was expanded into 15 subsidiary problems including the following:

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Students drop instrumental music because:

1. They are improperly motivated through high pressure tactics, influence of friends, and pressure from parents.
2. They are not selected by test methods which will increase their chances of making progress.
3. Music teachers do not establish positive working relationships with parents.
4. The objectives of music education are not made clear.
5. Of the lack of orientation and cooperation among elementary, junior high and senior high school.
6. Of the discouraging junior high school practice of transferring instruments.
7. Of the low quality of school-provided musical instruments.
8. Of poor pupil-teacher relations.
9. Of the selection of low motivating music materials.
10. Of poor methods of evaluation.
11. Of lack of recognition in the group.
12. Of unrealistic demands upon their time.
13. Of the influence of others who drop.
14. Of problems of class schedule.
15. Of the necessity or desire to spend their time earning extra money.

Chapter II, entitled "Review of Literature," is predominantly concerned with material related to the hypotheses which were to be investigated in the study rather than related literature in the form of instrumental dropouts. However, several studies related to general dropouts in public schools are cited.

Procedures and Findings

Procedures and techniques of the study are described in Chapter III. A questionnaire and attitudinal rating scale were designed for administration to 200 dropouts from instrumental programs as well as to 200 students who were presently participating in an instrumental program. This procedure was based on the assumption that participating students would have received expressions of the true reason for discontinuance in instrumental programs from dropouts. Responses of the nondropouts were intended as a check against those of the dropouts.

The questionnaire contained (after reconstruction on the recommendation of four professors in the Education Department of Michigan State University) 42 questions of general information. Responses to these questions made available to the investigator an accurate description of the student completing the questionnaire. The attitudinal scale, consisting of 26 statements (after revision) required the student to rate his reactions to his musical experience on a "very important," "fairly important," or "of no importance" continuum.

Five Class A High Schools in the state of Michigan were selected for inclusion in the study. Criteria for selection of the schools were that: (1) instrumental directors be teaching on the same level, (2) job opportunities for students be comparable, (3) distractions in the communities be similar, and (4) school and social activities in the schools be similar.

Chapter IV analyzes Part I (background information) of the student questionnaire, and Chapter V analyzes Part II (attitudinal scale). Chapter VI offers a comparative analysis of the two parts.

Information secured from these analyses indicated that: (1) 62 percent of the dropouts were among the weaker players in their groups, (2) the largest dropout rate occurred among stringed and transfer instrument students, (3) the highest incidence of dropout followed ninth grade graduation, and (4) the majority of the dropouts began the instrumental experience in the fifth grade and had averaged three and one-half years in the music program.

More "white collar" category parents were acquainted with the teacher than were "laboring" category parents. Moreover, more parents of non-dropouts were acquainted with the teacher than was the case with dropouts. Finally, where parents were acquainted with the teacher, student responses tended to be more positive.

In light of these findings, the investigator recommended that: (1) methods of recruitment and selection be reevaluated in view of the fact that 62 percent of the dropouts were weaker players, (2) transfer of instruments be accompanied by careful counseling of both student and parent, (3) more orientation for students at the ninth grade level, and (4) teachers make a greater effort to become acquainted with the parents of the student they teach.

Comments

The investigator is to be commended for his efforts in pursuing a problem which has been and continues to be a source of embarrassment to music educators. Furthermore, the absence of typographical and, for the most part, grammatical errors indicates careful and thorough work on Bergan's part.

Without question, the study is quite subjective, and the reviewer is in complete agreement with the investigator's comments relative to the weaknesses inherent in a study of this type. For example, the author realizes that the sizes of the cities selected would likely produce situations which would not be representative of all dropouts. Social and economic differences in cities of similar size could also be limiting factors. Moreover, the fact that the questionnaire "was administered by different individuals in each school presents the possibility of influence of personality, varying degrees of rapport established and effects of past teacher-pupil relations" (page 5). Finally, the author is cognizant of the element of lapse of time between dropout and response to the questionnaire by students. He states that "many of the students were responding three to five years after they had severed relations with the musical organization. Their real reasons could be tempered with time and colored in retrospect" (page 6). Upon recognition of these limiting factors, Mr. Bergan proceeds to conduct a rather thorough study.

The reviewer noticed that on several occasions the author, when referring to unpublished materials, quoted from journal and magazine reviews rather than from original materials. It would appear, since unpublished theses are available through interlibrary loan, that the use of the original theses when seeking information would have produced a more authentic study.

It was somewhat disappointing to note (in Chapter II) the absence of literature concerned with earlier instrumental music dropout surveys and experiments. Granted that little research had been conducted in this area prior to Mr. Bergan's study, it is believed that a more thorough search on the part of the author would have produced at least limited pertinent material.

It was further noted that footnote and bibliography entries for both published and unpublished materials were underscored.

Mr. Bergan is to be highly commended for the very thorough analysis of data secured from the questionnaire. Within the scope of his study he leaves "no stone unturned" in seeking the answer to the problem of instrumental dropouts. It would appear, in light of the preceding observations, that this study moves one step further in the direction which may eventually lead music educators to a better understanding of why many talented boys and girls forego the opportunity of developing their musical capacities.

Biggs, Robert M. An Evaluation of Technique Employing the Use of the Magnetic Tape Recorder in Teaching of Students of Brass Instruments.* University of Iowa, 1962

Reviewed by Maurice Gerow

The problem,as stated, calls for a scientific approach to prove that the use of a method for teaching brass instruments which employs the tape recorder will be more beneficial to the student than a method which does not employ the tape recorder.

The chapter titles are: Introduction and Statement of the Problem; Related Studies; Procedure (general procedure of study); Testing Procedure; Results; Summary and Conclusions. Each chapter is subdivided into smaller, descriptively titled sections that support the main chapter heading. In addition to the six chapters, the author has included an extensive appendix section which includes a questionnaire, musical examples, statistical results, and other information that pertains to the dissertation.

The historical survey of the general development and use of audio-visual aids in education is very comprehensive and includes within its scope not only the uses made of such equipment, but also the development in recent years of much better equipment.

The problem itself, according to Biggs, stems from a status survey which he conducted to determine the percentage of brass teachers in the United States who were using the tape recorder in conjunction with conventional teaching methods, and their reasons for such usage. In the investigation of the problem it was assumed that the teaching and practice time expenditures would be equal for both teaching techniques.

One shortcoming that can be observed in the introduction of the problem is the author's failure to define certain terms. Many of the terms used could be classified as ambiguous. Because of the lack of a definitional section these terms may be interpreted quite differently by various readers.

In a review section of related studies, the author states that in very few studies was the problem of audio-visual aids approached experimentally. Most of the works reviewed were status reports of what existed, suggested usages, or suppositions of probable success. Only in a very few cases were the studies based upon any kind of sound comparative results. One experimental study that was reviewed paralleled Biggs' experiment. It was conducted in the field of voice. The results of this study, as it turned out, were similar to the results of Biggs' research.

From the original statement of the problem, Biggs derived these hypotheses:

1. Students taught by following a predetermined technique employing the use of the tape recorder would improve significantly in over-all performance over students taught without the use of such equipment.

2. The same students would improve significantly over the second group in the facet of technique.

3. The experimental students would improve significantly over the control students in the area of interpretation.

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To test these hypotheses the following experiment was devised. Twenty students were selected from a group of volunteers and divided into an experimental group and a control group. The experiment encompassed an eight-week period; during this time identical weekly lesson assignments were given to both groups. Each assignment contained the performance problems existing in the etude which was used for testing purposes. Each student received one 45-minute weekly lesson which was given by the author. Each student was required to devote six hours each week in outside preparation of lesson material. The lesson procedures and methods of practice were predetermined for each group. Each student was given a recorded performance test three times during the eight weeks. These tests were evaluated by three adjudicators and:

> the scores of individual tests were tabulated and analyzed to determine whether or not teaching by the experimental technique using the recorder resulted in significant improvement over teaching by a conventional method without use of the recorder.

All phases of the above outlined experiment were controlled with great care. Before being placed in the experimental or control group by a "flip-of-the-coin" method, all students were matched in pairs by the following criteria: ability; extra-curricular musical activity; past musical experience; and academic background and degree of success in school work. The music selected for lesson assignments contained problems of articulation, phrasing, general technique, and interpretation that would be encountered in the test etude itself. The practice procedures for both groups differed only in these areas:

1. The experimental group used 70 minutes of the six hours to listen to the taped lessons.

2. Control group students used conventional practice procedures.

The weekly assignments for both groups were the same and included the three areas of warm-up and flexibility, technical exercises, and interpretative studies. All the students were familiar with the adjudicator's grade sheet and knew what facets of performance would be evaluated. To counterbalance any varying degrees of sight-reading ability, each student was allowed to look over the test etude for six minutes before the recording test.

The treatment of the data collected from the above experiment was very thorough and accurate. For an explanation of this treatment let me quote the following passage:

> In order to interpret the scores of the tests administered to the subjects of this investigation, the writer followed two methods of evaluation. The basic method of approach involved computation and analysis of various score means which were possibly concerned with interactions resulting from the experimental procedure. Secondly, analysis of variance was employed in an attempt to statistically corroborate the initial findings.

To determine the reliability of the scores assigned by each judge, correlation coefficients were run on the scores. These coefficients were high enough to indicate notable consistency in the scores made by the three judges.

The statistical results obtained from the data collected were such that Mr. Biggs was forced to conclude:

> No statistically significant differences in improvement between experimental and control groups were found in either performance, technique, or interpretation.

Although Biggs was not able to prove his hypotheses on the basis of results of his study, he felt that there were many related investigations that might and should be made, for there has been relatively little evaluation done in the facet of music education through audio-visual media.

The author's thoughts are well expressed, and in a manner that is both unbiased and impersonal. Although the statistical results obtained from the experiment did not support the acceptance of Biggs' hypotheses, I felt that the paper as a whole is an excellent example of research that can and needs to be done in the field of instrumental music education. It was well organized and proceeded in a logical manner. With short-term studies such as this, one wonders if the results would be the same with a larger population and over a longer period.

A COMPARISON OF TWO RESPONSE MODES IN LEARNING WOODWIND FINGERINGS BY PROGRAMED TEXT* Florida State University, 1965

William Marvin Bigham, Jr.

Reviewed by Walter L. Wehner

PURPOSE

The purpose of Bigham's study was twofold: (1) to develop a programed text for teaching the principles and applications of woodwind fingerings for college music students and (2) to use this programed text in an experimental situation.

The study of woodwind instruments is a required or an elective subject for all college music education majors; research dealing with this topic is therefore of some importance. Teachers who have worked with this endeavor know the difficulty encountered in the teaching of fingerings, and that the classes are conventionally made up of students whose musical backgrounds differ ranging from students who have performed for many years on a woodwind instrument to those who have never held one. The program as developed by Bigham could provide the basis for better and more comprehensive teaching and learning.

The problem was how to program the materials so use of fingering diagrams would most efficiently enable students to reproduce the fingerings physically on the instrument in response to given notation. Two response modes were considered in the study: (1) the "diagram response" where the student saw the fingering diagram followed by several blank diagrams which he completes for each new fingering introduced and (2) the "motor response" where the subject saw the diagram followed by an exercise of placing the correct fingering on the instrument in response to notation. Prior to the introduction of the specific fingerings, sections on basic principles common to all the woodwinds and one on the six basic fingerings were presented.

The sample included students enrolled in the sophomore instrumental methods class augmented by other music students and elementary education majors with piano background enrolled in a public school music course at Florida State University. Thirty-four students began and 30 students (9 boys and 21 girls) completed the program.

The subjects were divided into three groups:

1. Subjects with some prior clarinet experience (13 students).
2. Subjects with some prior flute experience (6 students).
3. Subjects with no prior woodwind experience (11 students).

Previous experience was accounted for if it amounted to four or more weeks of individual or class instruction. These students took a pretest in diagram mode consisting of the same 15 fingerings as on the posttest. Each group of students was then divided at random into the two methods of responding: diagram response and motor response.

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Work sessions were independent. Each student in the motor response mode was given a clarinet and a flute to work with; the diagram mode students worked from the text. Work sessions had to be one hour in length and all work had to be completed within seven days. No control was made on amount of time spent learning the fingerings by either mode.

The posttest was administered by flash cards and required the students to place the fingers correctly on the instrument. The same type of response was practiced in the motor response mode.

CONCLUSIONS

The author concluded that the motor response method was superior to the diagram response method for those subjects with no prior woodwind experience. There was no significant difference between the two methods for those subjects who had prior woodwind experience.

The subjects with prior experience learned more from the diagram method than did those with no experience. There was no significant interaction between the mode factor and the experience factor.

Bigham concluded that both woodwind experience and the motor response method are positive factors in learning woodwind fingerings. However, subjects who had the benefit of both factors did no better than those who had the benefit of only one of the two factors--prior experience or motor response method. The subjects who did not have the advantages of prior experience or the motor response methods suffered in their learning performance.

The author found the use of the programed material encouraging when analyzing errors made by the subjects. He found that the errors were limited to the misplacement of one or two fingers or to the selection if fingering for a different octave. In general, the response was enthusiastic and most of the subjects felt that they benefited from the program.

CRITIQUE

The teaching of woodwind instruments to public school music majors is an important part of the instrumental methods class instruction. Often one encounters difficulty in learning woodwind fingerings and retaining this knowledge. With a programed text, a student can adapt the learning of the fingerings to his own needs and abilities. Bigham has provided a text for this specific purpose.

Three people were used in the study who had previous flute experience and received perfect scores on the pretest. The same 15 items were used for both pretest and posttest. The experiment was not valid for these three students.

The functional ranges usually discussed in a woodwind instrumental methods class were utilized in the programed text. The entire ranges were not included. The author included related material in his programed text concerning the physical nature of the two instruments which is extrinsic to learning fingerings but interesting to the student subjects.

Bigham has completed an interesting program which certainly can aid the teacher of instrumental methods classes. Next is to develop a programed text for beginning instrumentalists in the grade and high schools.

Boardman, Eunice. An Investigation of the Effect of Preschool Training on the Development of Vocal Accuracy in Young Children* University of Illinois, 1964

Reviewed by Charles H. Ball

The purpose of this study was to investigate the relationship between maturation and the development of vocal accuracy in young children, and to determine the effect of preschool training on that development. In order to study this problem, Dr. Boardman formulated seven hypotheses:

1. Kindergarten children who have experienced a vocal skill-centered program at the preschool level will reveal superior vocal accuracy in the (a) lower range, (b) middle range, and (c) upper range when compared to kindergarten children who have not had such training.

2. First grade children who have experienced a vocal skill-centered program at the preschool level will reveal superior vocal accuracy in the (a) lower range, (b) middle range, and (c) upper range when compared to first grade children who have not had such training.

3. Second grade children who have experienced a vocal skill-centered program at the preschool level will reveal superior vocal accuracy in the (a) lower range, (b) middle range, and (c) upper range when compared to second grade children who have not had such training.

4. There will be a significant improvement in vocal accuracy over a three year period (from kindergarten children, first grade children and second grade children are compared.

5. Improvement in vocal accuracy over a three year period (from kindergarten through second grade) will be greater for children who have experienced a vocal skill-centered program at the preschool level than for children who have not had such training.

6. Vocal accuracy of children will vary in relation to the range (low, middle, or high) of the tonal pattern.

7. Children who have experienced a vocal skill-centered program at the preschool level will be more consistent in vocal accuracy among ranges (low, middle, and high) than children who have not experienced such training.

To test these hypotheses, Dr. Boardman selected an experimental group consisting of sixteen kindergarten children, fifteen first graders, and fifteen second graders who had experienced a vocal skill-centered preschool program at the Child Development Laboratory at the University of Illinois. She selected an equal number of children to form the control group. These controls were matched with the experimental children for age, sex, previous attendance at nursery school, socio-economic status, and grade level. She then administered a test of vocal accuracy which she formulated on the basis of Petzold's identification of the most common tonal patterns found in children's songs.[1] Appropriate non-parametric statistical methods were used in the analysis of the data.

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The first three hypotheses were not supported by the data. There was no significant difference in vocal accuracy between experimental and control subjects at kindergarten, first grade, or second grade levels. There was, however, a slight apparent advantage for the experimental group. Of this Dr. Boardman says:

> This was to be expected in view of other studies made on the effect of training on the development of specific skills. Research conclusions regarding the attainment of abilities other than vocal accuracy seem to follow a common pattern, as observed in the summarization of related literature. Early training gives an advantage until the normal maturational process, plus later training, allows the comparison child to equal the earlier attainments of the experimental child. The comparison children in the present study had had a minimum of six months training when the test was administered in March of 1962. In contrast, the experimental children had had a minimum of eighteen months, or two school years, at the Child Development Laboratory in addition to the six months experience in kindergarten. In view of the wide difference in length of training, the lack of significant difference in the accuracy indicates that the developmental patterns found in the attainment of other skills is retained in the growth of vocal skill. Early training may accelerate, but not otherwise affect, the growth pattern.
>
> The large amount of improvement between the kindergarten and first grade comparison children contrasts strikingly with the degree of improvement found between kindergarten and first grade experimental children. This difference in development also supports the conclusion previously stated that the effect of preschool training is primarily to accelerate the developmental process rather than to affect the end-product in any other manner. The additional nine months of training which the first grade comparison group had experienced, plus normal maturation, may be assumed to have made up for the lack of preschool training which the experimental children had enjoyed.[2]

Hypothesis four was supported by the data for the control group only. The control group showed improvement from kindergarten to second grade which was statistically significant at the .05 level. Although the experimental group showed improvement over the same period, the improvement was not significant at the .05 level. Hypothesis five is, therefore, not supported by the data. Dr. Boardman's interpretation of this is:

> Statistical analysis of the performing abilities of kindergarten, first, and second graders provides additional support for the conclusion that preschool training accelerates, but does not otherwise improve, normal developmental processes. No significant differences were found when the scores of experimental children at the three grade levels were compared; analysis of comparison children's scores did show a significant increase in ability with ascending grade level. The difference in results between the two groups indicates that the experimental children attained the ability to reproduce a melody more quickly than they would have without training. Once a plateau of performance had been reached, however, the rate of improvement slowed down. Comparison children, on the other hand, started at a much lower level of performing ability. With the introduction of training, a large and relatively sudden amount of improvement occurred. By second grade the two groups had attained approximately the same level of performance ability. One may hypothesize that the degree of improvement will continue at approximately the same rate for both groups in future years.[3]

In the test of hypothesis six, no significant difference in difficulty between ranges for kindergarten experimental children was found, but the difference in difficulty between ranges for control children was significant at the .02 level. The difficulty experienced by these children was in the upper range. Neither group showed a significant difference in difficulty by range at the first grade level. At the second grade level, no significant difference was found for the control group. The experimental group, however, showed a difference which was significant at the .02 level. Again, the difficulty was in the upper range. The data did not support hypothesis seven. Of this Dr. Boardman says:

> Study of the results of the statistical analysis of scores by ranges leads to the conclusion that there is some increase in difficulty in the upper range. In the two cases of significant difference, the results indicate that the upper range is the most difficult. This same trend may be seen in those groups where no significant difference occurred. In all cases the number of correct scores was less for the upper range than for the other two ranges. In view of the lack of consistent difference, however, one must conclude that range of tonal pattern is not so important as other studies, such as those of Smith and Williams, have implied.[4]

Dr. Boardman has provided the profession with a valuable developmental study. Her review of the literature pertaining to the subject is in itself a major contribution. All cross-sectional studies, of which this is an example, share one major difficulty: that the different levels of development are represented by different samples, making the plotting of a true developmental curve impossible. For this reasons, a replication utilizing longitudinal techniques would be desirable. This fact was fully recognized by Dr. Boardman and was acknowledged in the text of her report. The statistical techniques utilized were suitable and were accurately performed. Hypotheses five and seven were not tested statistically, decisions being reached by examination of the data only. While this could be interpreted as a weakness in methodology, statistical tests performed by this reviewer, using Dr. Boardman's data, confirmed her conclusions.

Footnotes

[1] Robert Petzold. "The Perception of Music Symbols in Music Reading by Normal Children and by Cyildren Gifted Musically," The Journal of Experimental Education, Vol. XXVIII, No. 4, 1960, pp. 274-279.

[2] Eunice Boardman. An Investigation of the Effect of Pre-School Training on the Development of Vocal Accuracy in Young Children. Unpublished Dissertation, University of Illinois, 1964, pp. 79-80.

[3] *Ibid.*, pp. 80-81.

[4] *Ibid.*, p. 81.

Boekelheide, Viola. Some Techniques of Assessing Certain Basic Music Listening Skills of Eight- and Nine-Year-Olds. Stanford University, 1960

Reviewed by Bessie R. Swanson

At the beginning of the dissertation the author states that her research in testing was "an exploratory effort designed to find a means for better understanding of the teaching-learning process as it relates to the acquisition of certain basic music listening skills." Her preliminary research included study and summation of opinions and data found in the current school music textbooks, teachers' guides, curriculum bulletins and other publications. She reports that "the publications showed quite strong agreement regarding a sequence of music activities relating to certain music elements and the music listening skills which were to be developed through the primary grades."

A. A Summary of the Tests

On the basis of the research mentioned above, Miss Boekelheide developed tests to assess basic music listening skills in six areas:

1. A Rhythmic Response Test was designed to determine whether the child senses the quality of rhythmic movement when he considers it in terms of appropriate bodily responses to music. This test consisted of 12 musical excerpts that Miss Boekelheide considered representative of different rhythmic movements. In the entire test nine types of movement were suggested as possibilities; stick figures were drawn to help the child visualize and feel the various movements--walking, swinging, jumping, galloping, marching, swaying, turning, hopping and skipping. For each composition, played from a recording, the child was asked to mark his choice of the best of three types of movement pictures.

2. The Melodic Contour Test was designed to determine how well the child is able to relate an aural image of a tonal pattern to a visual representation of the pattern. The test consisted of 12 fragments of melody (six to fourteen notes in length) selected from children's songs. Each was played three times by a clarinet (recorded) as the children studied three different melodic contours (the melody heard and two variants) given on the test sheet. The graphic representation of the melody consisted of a group of horizontally related long and short lines (to show duration and rhythm), vertically spaced to show pitch. The child was asked to mark the group of lines he thought was a "picture of the melody."

3. The Pitch Discrimination Test was designed to determine how well the child apprehends the tonal concept of high and low in terms of tunes rather than isolated tones. A phrase of music was played twice on the clarinet (recorded), first in one key and then in the same, a higher, or a lower key. For each of the 12 paired stimuli played the child was directed to mark the stick figure representing a "lower," "the same," or a "higher" pitch level

for the second playing of the melody. Pitch levels for the paired melodic fragments were from a semitone to a minor seventh apart; several of the examples played were either above or below the singing range of the children.

4. The Phrase Discrimination Test was designed to determine whether a child is able to perceive and retain the tonal image of a melody with sufficient clarity to compare and contrast it with another. This test consisted of 12 paired melodic fragments which the child was directed to identify as "alike," "almost alike," or "not alike." The melodies were kept within the pitch level of the children's songs from which they were taken, and they were played on contrasting instruments, the clarinet and the violin (recorded).

5. The Form Test was designed to determine whether the child perceives the relationship of different parts of a simple composition. It consisted of 12 melodies, each having four phrases in different relationships. The children were given three possible answers for each example played (e.g., ABAB, AAAA, ABBA), and after one hearing of the melody each child was to mark his preference for the right answer. Again the clarinet was used to play the melodies. In administering the test Miss Boekelheide indicated the end of each phrase by a clap so that the children had only to determine the relationship of the phrases.

6. The Mood Response Test was designed to reveal the influence of the music upon the mood of the child and to determine his ability to communicate this feeling verbally. Nine unfamiliar orchestral compositions were played from recordings. With the first four musical selections the child was directed to circle one of three possible words "which tell how the music makes you feel." With each of the last five compositions the child was given eight word clusters, and he was directed to circle the group of words that best described the feeling conveyed by the music.

In the report of the study the author showed the various forms of the tests that she developed and stated her reasons for modification which lead to the test finally used. Of further interest to Miss Boekelheide was the possible relationship of performance on the tests to:

(a) the general ability of the student;
(b) the socio-economic status of the family;
(c) the child's attitude toward music; and
(d) the teacher's judgment of the musical ability of the child.

In addition, she wished to discover what implications could be drawn from the study regarding the improvement of the teaching of music at the primary level as it related to basic listening skills. Her conclusions in these two areas took into consideration the tests, evaluation of the short answer forms completed by the children and the teachers, intelligence and reading achievement test scores, and information concerning the training and experience of each teacher.

B. Researcher's Summary of Results of the Testing Program

The following statements summarize the results Miss Boekelheide found in the separate parts of the research study:

1. When they consider rhythmic movement in music in terms of appropriate bodily responses 81 percent of the children at the eight- and nine-year-old level have developed the listening skill to conceptualize the movements listed.

2. Most eight- and nine-year-olds have not developed to a very high degree the ability to relate an aural image of a tonal pattern to a visual representation. In the Melodic Contour Test 48 percent of the possible answers were right answers. However, there was a wide variation of incorrect answers among the separate items which lead to observations which the researcher felt would be valuable in constructing other tests of this kind.

3. Miss Boekelheide concluded that "two important factors which influence the degree of difficulty of an item on the Pitch Discrimination Test are the level of the pitch, particularly whether the phrases are within the child's singing range, and the size of the interval which is used...the phrases with differences of a half step were the most difficult items for the children to identify correctly." In the results of this test 50 percent of the possible answers were right answers. The research showed that "there is a tendency for the high achievers on the Pitch Discrimination Test to be high in the total battery of achievement tests, teacher's judgment of musical ability, and the total music scores."

4. The most difficult items on the Phrase Discrimination Test were those in which the phrases were most alike. Among the total responses 57 percent of the 12 possible answers were right answers. As a result of the study Miss Boekelheide concluded: "It seems probable that the ability to sing a melody accurately and general ability may be important factors in developing the skill of eight- and nine-year-olds in distinguishing like, almost alike, and unlike phrases."

5. In the Musical Form Test 46 percent of the possible 12 answers were right answers. Miss Boekelheide stated that: "The data concerning the ability of the child to hear design in music suggest that many of the children have not developed this listening skill to a very high degree...and the evidence tends to show that the children who have more maturity, as shown by the achievement scores as well as musical ability as judged by their teachers, have most success in developing the ability to hear design in music."

6. Miss Boekelheide found that "the children's responses to the mood of the music showed considerable maturity. Many of them in their responses resemble those of college music majors" who took this portion of the test.

Mood Response Test was considered separately from the other tests because it was not possible to establish a "correct-incorrect" analysis of the responses.

In summary of her research Miss Boekelheide stated: "Greatest differences in mean scores among the ten classrooms were on the Form Test and the Pitch Discrimination Test while the least difference in mean scores among the ten classrooms was on the Rhythmic Response Test."

"Classrooms with highest mean scores were those which either had teachers with some music competence or were populated by children who had high scores on intelligence and academic achievement tests, or both."

As a result of her research Miss Boekelheide observed:

The "teacher's judgment of the child's over-all ability in music is too strongly dependent on her rating of the child's singing ability. According to the music tests, there are some instances when the classroom teacher seemed unaware of the child's other potential in music because the teacher relied so much upon the criterion of singing ability."

It seems possible that teachers who have a means for assessing children's music listening skills will help more children develop positive attitudes toward music than those teachers who do not have such means.

C. Critique of the Dissertation

This research might provide a foundation for the design of a testing program that could help teachers bring the development of music skills into better focus at the primary level. The following points are offered by this reviewer both as a critique of the study and as guidelines for the further development of a testing program.

1. The limitation of the study to "basic music listening skills"

   It is understandable that such a research project must be carried on within well defined limits. The pre-tests seem to indicate, however, that the limitation was more a reflection of the musical material the researcher originally planned to use than the isolation of skills peculiar to listening. The ability to follow melodic movement is as much a part of "singing" and "playing" as it is of "listening." Miss Boekelheide might have made a better definition of the study had she stated it in terms of "hearing basic elements of music."

2. The assessment of "musical growth"

   In the introduction Miss Boekelheide stated that in designing the study she wished to "focus attention on the children...how do they vary in the acquisition of listening skills?...Is it possible to assess musical growth as it is related to listening?" There are several references to "musical growth" in this study, and yet the tests do not measure before and after any given period of time or type of training. Miss Boekelheide apparently had no part in the preparation of the children. She selected classes with teachers identified as having general secure or insecure feelings about teaching music. The study would seem to measure a child's understanding and skill in music, due to good teaching, or in spite of a lack of it, helped by his intelligence, interest and motivation.

This reviewer would like to have seen these tests given a second time, after a month of teaching, incorporating the skills required in the test. With consistent instruction, the classroom teacher, guided and perhaps assisted by Miss Boekelheide, might have effected development that could have been assessed as "musical growth."

3. The criteria for the selection of music used in the Rhythmic Response Test

In discussing the design of the test Miss Boekelheide did not say what musical basis she used for the selection of the examples in this test. She did state that the "right" rhythmic response was usually determined by "using the information gained by the writer from the following sources: (a) opinion of music educators in their teaching suggestions as found in the RCA Basic Music Library; (b) study of children's responses to selected music stimuli."

It would seem that in the design of such a test consideration should be given to the characteristics in the music that make it suitable for a specific movement response. Miss Boekelheide alluded to this in her summary of the children's performance on the tests: "The degree of difficulty of an item in the Rhythmic Response Test depends upon several factors. One of the most important factors is the character of the music. How many cues for the movement response are in the music and how obvious and familiar are these cues? For example, a martial drum beat and a strongly rhythmic march movement gives little opportunity, to children in our culture, for alternatives..." (page 85).

This discussion itself reveals the fact that the test was not a valid test of response to rhythm, that other factors such as instrumentation, characteristics of melody, etc. have a bearing on the response given. If such a test is to be used the music selected should be carefully studied and the "cues" evaluated during the designing of the test.

4. The limitation of the testing of rhythm to the Rhythmic Response Test Used

It is general practice to have young children respond to rhythm in music by using the fundamental bodily movements that Miss Boekelheide listed. This is a procedure that can lead to general concepts about movement in music, but it is doubtful that the characterization of music as "skipping," "hopping," or "marching," etc. is a valid basis for a test. By the time children reach the third grade such movements should have been related to meter and measure in music where there could be validity in testing how well a child distinguishes between duple and triple meter.

Children of this age can judge between rhythm patterns that are the same or different, and this might be an area for more attention in such a testing program. Some consideration of rhythm patterns was inherent in the Melodic Contour Test and the Form Test; however, a series of melodies in which the rhythm patterns alone are "the same" or "different" might have been a valid evaluation of response to another aspect of rhythm.

5. The length of the melodic fragments used in the Melodic Contour and Phrase Discrimination tests

   It is reasonable to assume that children of this age might have greater success in the differentiation of shorter phrases rather than longer phrases. The question arises: How short can a melodic fragment be and still have character as a "phrase"? In the opinion of this reviewer some of the phrases used in these tests are too short On the other hand, the Pitch Discrimination Test might be more effective if tonal patterns or motives rather than phrases were used.

6. The quality of the melodic fragments used.

   Relative to the Phrase Discrimination Test Miss Boekelheide stated that the most difficult items "are those in which the phrases are most alike," and yet all of the phrases in that test are drawn from similar types of folk song based on typical scale line or chord figures. More variety in testing material as well as other values might be derived from the use of a wider variety of melodic material.

7. The use of stick figures to give visual representation to differences in test examples

   The use of the stick figures as an aid to this age child probably was justifiable in the Rhythm Response Test and in the Pitch Discrimination Test wherein responses of "alike," "almost alike," and "not alike" were required.

8. The limited hearing given the examples in the Form Test

   Remembering and comparing phrases in music is the most advanced skill represented by this series of tests. Since responses to such a test demand an awareness of a composite of musical elements (pitch-level, melody, rhythm) and since there were three possible choices in the answer, the example probably should have been played not once as it was, but three times as for the Melodic Contour Test.

   In its present form this test represents merely another level of the Phrase Discrimination Test. In a new test design short orchestral compositions might be used; the concept of form should be on a broader basis than the comparison of phrases.

9. The subjectivity of the Mood Response Test

   It would seem that the Mood Response Test is too subjective to serve as a measure of "skill" in listening to music.

   Responses to items in such a test are composites of so many factors that they are of little value in assessing music listening skills. However, it was interesting to see how the children's responses correlated with those of college students A number of implications could be drawn from this point.

10. Tone color as a basic element in music

Although tone color served indirectly as one of the variables in parts of the test, Miss Boekelheide omitted it from direct consideration because her study of publications in music education showed that "expectancies in music listening skills for tonal discrimination, like harmony, are not usually stated in specific terms,..." (page 30).

In the kindergarten and primary grades children are provided with instruments representing a wide range of tone, the recommended listening repertoire includes music played on many different instruments. Therefore, a test might be designed to show a pupil's ability to hear differences in tone color. Such a test could be similar to the phrase discrimination test; solo instruments might alternate playing consecutive phrases; the pupils could respond that the phrases were played by the same or by different instruments, or they could state how many instruments played the melody, etc.

In summary. This reviewer believes that Miss Boekelheide's concern with the measurement of skills in music in the primary grades is valid. The type of test that she designed points the way toward procedures that could help teachers evaluate learning in music at the elementary level. On a commercial basis, perhaps this is a service that the textbook publishers could provide in connection with the series of music books and records each produces.

O. A. Broquist. A Survey of the Attitudes of 2,594 Wisconsin Elementary School Pupils Toward Their Learning Experience in Music. University of Wisconsin, 1961.

Reviewed by Joseph E. McGrath

Dr. Broquist's dissertation is, all in all, a quite monumental attempt to apply the methodology of the social sciences to problems in the field of music education. Broquist's study is a comprehensive investigation of the attitudes of boys and girls, from 2nd through 6th grades, toward their school music programs as a whole and toward various aspects of that program. Aside from the various substantive findings which the study presents, it offers two major lessons to those who would "do research" in music education or in various other fields which are not primarily research-oriented disciplines. The first lesson is that adequate research is no business for amateurs and that it requires a level of effort and a rigor far greater than that required for the usual glib citing of the opinions of various "authorities" on a given subject matter. The second lesson is that the effort required for adequate research is only justified if the research is carefully planned and well executed, and if the problems studied are significant ones. The main aim of this review will be to point up these two lessons.

It should be noted at the outset that this reviewer is not trained in either music or education, hence is not competent to evaluate many substantive aspects of Broquist's study. The reviewer's training is in the field of social psychology. However, the study deals primarily with the assessment of attitudes--a key social psychological concept--and attempts to apply the methodology of social psychology and related social sciences. Hence, the review will concentrate on the methodological, rather than the substantive, aspects of Broquist's study.

To summarize the study briefly: Broquist developed a comprehensive list of specific activities which form a part of the music education programs of elementary schools in Wisconsin, and asked pupils from first through sixth grades in each of 20 elementary schools to indicate their liking for the various activities. While the specific activities varied for different grade levels, there was a sufficient core of common activities included for grades two through six to permit comparisons between grades as well as between boys and girls within each grade. (Comment on the sampling procedures used, and on the procedures used for processing and analyzing data is reserved for a later part of this review.)

His main findings are as follows:

1. Pupil attitudes toward music (or at least "school music") steadily decrease in favorableness from 2nd through 6th grade.

2. Girls' attitudes toward music are more favorable than boys' at every grade level, and decrease less than boys from 2nd through 6th grades.

3. These attitudes and attitude shifts do not differ for children taught by specialist teachers and those taught by a combination of classroom teacher and specialist consultant; nor do the two types of teaching systems show any clearcut differences in music program balance or emphasis.

4. For all ages and both sexes, instrumental music activities are most popular, and music reading and writing plus unaccompanied singing are least liked by the pupils.

The reviewer would be violating his allegiance to sound scientific methodology if he were not to point out certain major weaknesses in Broquist's study. He does a decidedly poor job of reviewing the theoretical and research literature on the attitude concept and on methodology for measuring attitudes. One would think, from Broquist's review, that social psychology stopped all conceptual and methodological work on attitudes about 1933, once Thurstone had presented his pioneering work and a few others had commented on that work. This, of course, is absurd; and Broquist has not even indicated the existence of a whole body of literature which constitutes a sub-science of formidable proportions. This is probably an error in scholarship rather than a deficiency in technical knowledge. One would suspect that Broquist (or his advisers) were far more conversant with the field of attitude measurement than he was able to convey in his inadequate review of the matter, because the actual methodology used was quite appropriate for the task at hand.

Similarly, Broquist displays a very poor understanding of the scientific concept of validity (as opposed to the artist's use of that term), and a very fuzzy notion of the related question of how attitudes are related to overt behavior. The latter is a question far too broad for full treatment here, but a brief word is required. Broquist assumes that we can have no valid measure of attitude unless there is a 1 to 1 mapping between attitude and action. Hence, "I like music" is a valid expression of an individual's attitude toward music if and only if accompanied by the observation that the individual plays, sings or listens to music; and if not, the former is not valid. This is a most naive position, comparable to the physicist expecting a molecule of water to display all the properties of each of its constituent elements--including the gaseous state of both and the combustible property of hydrogen--as a test of the validity of the properties of the elements. Obviously, a given attitude is an intervening predisposition which influences--but does not solely determine behavior in any concrete instance. Again, Broquist's subsequent use and interpretation of attitude measures and concepts displays far more sophistication than does his explicit discussion of these concepts.

Broquist's methods for processing his data are crude, but probably adequate for his purposes. One theme which recurs several times, and which is particularly annoying to this reviewer, is the stress given to the fact that data were processed with the aid of computing equipment. One gets the impression that the author wishes to add an aura of "Scientificness" to his study by repeated references to his use of computer equipment. Let us hope that he, as well as all readers of this review, are fully aware that the use of electronic computors to add, subtract, multiply and divide is no more or less scientific than the use of an adding machine, an abacus or our beloved Cusinaire rods! It is, of course, vastly more efficient, in time and cost. In fact, since the author had access to fairly elaborate computor equipment, it is a shame that he did not do a far more thorough job of data analysis, which could have been done with only a minor increase in time and cost.

Finally, Broquist drew a sample of schools (actually, he drew a random sample of 20 schools from a self-selected larger sample of schools willing to cooperate). He then proceeded to obtain data from all pupils in one class of each grade level in each of the selected schools. Hence, his sampling unit, and the unit of "Experimental independence" for data analyses purposes, is the school, not the individual pupil, as Campbell and Stanley (see Gage, 1963) have pointed out. For most of his analysis, Broquist treats the individual pupil as the "unit case," which is flatly inappropriate. However, his key analyses--those supporting his major conclusions about grade level and sex differences in attitudes--were done both "by individuals" and "by schools," and the two sets of analyses agree. Once again, Broquist seemingly "did better than he knew." He seems to treat the "by schools" analyses as secondary to his "by individuals" analyses, when in fact the former are the only statistical analyses which are strictly legitimate in view of his data collection procedures.

All of these comments support the first lesson to be learned from this investigation, namely: that scientific research is not a business for the amateur. One gets the distinct impression that Broquist's background was far from adequate for the enterprise he undertook, but that he managed to "do better than he knew" either by a fantastic series of happy accidents or by the skillful guidance of advisers. Fortunately, many of the likely pitfalls of misinterpretation (e.g., mis-interpretation of statistical results) and of over-generalization were carefully avoided by Broquist--so perhaps he is less an amateur in scientific method than in the communication of its rationale in written form.

To turn from the view of the methodological purist, however, we must recognize that Broquist has carried out a major and pioneering attempt--for the most part successfully--to apply the rigor of social science methodology to a field of study which has been all but devoid of such activities. If Broquist's review of past studies of attitudes toward music education is even fairly accurate, that problem area is almost without any factual basis to support a fairly voluminous literature of opinion. In fact, the apparently "classic" study of music attitudes by the Music Journal (Davis, 1951), which Broquist cites as the best prior effort to learn pupils' attitudes toward music education, is too ludicrous to warrant serious discussion here. (As Broquist reports, the editors of Music Journal asked children to express their attitudes toward music in the context of an essay contest and in competition for a prize. Would anyone be surprised if all the children who decided to enter the contest expressed "favorable" attitudes toward the "product" of the agency sponsoring the contest?) If that is the best prior effort, then Broquist's study is the first one which even merits the label of "research." Surely, Broquist's attempt to gather and assess evidence--as opposed to opinion and conjecture--and to do so systematically, makes his study worthy of a special place even in view of its methodological weaknesses.

But is the study truly "scientific"; and is it possible to have a "science of attitudes"? The answer to these questions are, largely, matters of definition. This reviewer likes to define "scientific inquiry" as the degree to which a research activity achieves each of four criteria: (1) objectivity of approach; (2) the use of explicit (hence replicable) procedures; (3) reliable observation or measurement; and (4) use of a sound logic of inference to reason from "data" to "conclusions." Regarding the first of these criteria, Broquist's study appears to have been done with considerable objectivity. Clearly, he makes his procedures quite explicit; one could readily repeat the exact procedures if we wished to check on Broquist's results. He also made an effort to determine the reliability of the instruments which he used to measure attitudes toward music, and his results showed sufficient reliability to warrant continuation of his study, although the findings could certainly be sharpened considerably if he had spent more time pretesting and improving his instruments and thereby increasing their reliability.

It is in regard to the fourth criterion that Broquist's study is weakest. He quite appropriately recognizes that to estabish statistical significance of differences (e.g., between attitudes of children at different grade levels) serves only to establish results as (probably) not due to chance factors. Statistical tests do not confirm the study hypothesis (i.e., the hypothesis that differences in attitudes arise from effects of the music program); they merely disconfirm (or, strictly, fail to support) the alternative, "chance" hypothesis.

But there are many other alternative hypotheses, as well, which could account for Broquist's results. While the author cites several, and discusses them, he is not able to present a very convincing case to rule them out. Two such alternative hypotheses seem particularly likely ones to this reviewer, viewing the matter as a social psychologist.

The first is the very likely possibility that his results reflect a positive response set. This possibility stems from three very widely established findings of social psychological study: (1) that respondents in our culture tend to give strongly favorable responses to almost any kind of attitudinal question; (2) this tendency for a generalized favorable response is stronger for females than for males; and (3) this tendency for a generalized favorable response to attitude measures tends to decrease with age. Broquist's main findings may be nothing more than the operation of such a favorable response set. All his subjects tended to show favorable responses; females showed more favorable responses than males; and younger children showed more favorable responses than older ones.

It is possible, of course, to design a study so as to rule out the operation of a generalized favorable response set. For example, if it were shown that attitudes toward certain school subjects (e.g., math or science) increased or did not decrease with grade, and/or that boys had equal or more favorable attitudes toward those subjects than girls, then Broquist's results could more creditably be attributed to the particulars of the music education program. (Of course, Broquist's findings about the relative attractiveness of different types of music activities are not subject to the above criticism of design; and these are consistent over age and sex.)

A second alternative explanation for Broquist's findings is based on the existence of fairly widely shared social norms in our society, which place a negative value on artistic endeavor (as "impractical "), especially for boys (it is "sissy "). Such norms ought to apply more strongly for lower-class children than for children of higher socio-economic backgrounds; hence, a check on attitudes by social class might provide a test of this alternative. If it is true that our children systematically learn negative attitudes toward artistic activities from their peers and families, and that these norms gain strength with later ages and are stronger for boys than for girls, then Broquist's results could readily be accounted for in terms of such norms.

The author discusses this possibility, and seems to recoil from it in horror. He rejects the "social norm" explanation, not because he can show why it is unlikely, but merely because he finds it unthinkable. He feels that if the social norm explanation were true, it would imply that there is no use trying to improve music education. It seems to this reviewer that, if negative social norms are the underlying reason for negative attitudes toward music, we gain nothing by refusing to "see" the hobgoblin; nor do we gain by responding to it in despair. The existence of negative social norms about music in our society seems to this reviewer to suggest that music education must realign--not abandon--its goals. However, even under this alternative explanation, Broquist's detailed data provide us with invaluable guides that indicate which aspects of music programs are the most attractive, hence, which could be stressed in order to offset such negative attitudes. Clearly, the field needs more such studies.

Cady, Henry Lord. Music in the Liberal Arts Colleges of Kansas and Missouri: An Investigation of Mutations in Philosophy from 1900 to 1960. University of Kansas, 1962.

This study is concerned with the philosophic and the practical role of music in the small liberal arts colleges of two midwestern states - colleges which are mostly church controlled, whose music departments during the course of the twentieth century in meeting the mounting problems of specialization in education, have today seemingly become "handmaidens to many gods."

Cady's work provides an insight into the historical development of music in the liberal arts colleges, the significance of which is probably not restricted by the geographical limitations of the study. Most liberal arts colleges have made major adjustments away from the limited curriculum of the 17th century Harvard College and the philosophical restrictions of the medieval concepts of music's place in higher learning. According to this study very few institutions retain the Aristotelian dichotomy as adapted to music by Boethius, rejecting the performer as a musician. Although the degradation of performance as a lesser intellectual pursuit is still forced upon talented men and women in liberal arts colleges, there is a diminishing effect of the division between theoretical and practical music. Nonverbal experience is attaining a more significant stature in higher learning, and the musician who does not make music but who merely speculates on the creative product of others and on the ideas about music no longer holds quite the supreme place he once enjoyed.

Cady points out that in order to fulfill its function today the liberal arts college must provide three types of dynamic music experience and meet exacting standards in each: that in cultural courses; experience in quasi-professional music performing groups; and experience in a professional musical curricula of quality. The small college faces the impossible task of meeting standards of all competing institutions and most are committed to professional programs. Indeed the survival of quality in music depends upon professionalism in the curriculum and the student who takes music as a "liberal art" with no intentions other than amateur status upon graduation is exceedingly rare. Very few institutions today retain a non-professional, rationalistic, dilettante philosophy of music education.

Purpose

Cady asserts that little has been done to discover actual historical changes of music in the liberal arts colleges of this country. It is his purpose to analyze and define mutations in the philosophic position of music in such institutions located in the states of Kansas and Missouri which have been liberal arts colleges since 1900. There are nineteen such schools. To give his study a national complexion he makes a comparison of these with six others outside this geographical area. He indicates that the purpose here is to discover what particular characteristics may be peculiar to those two states. None of the twenty-five schools concerned are identified. The investigator, however, identifies himself as the head of one of the nineteen departments studied.

Nature

The study is a report of an analysis of catalogs of the twenty-five liberal arts colleges for statements of philosophy of education in general, philosophy of music education in particular, academic and administrative organization, curriculum, and extra-curricular activities in music. This is supported by interviews with music department and other college personnel on the campuses of the Kansas and Missouri liberal arts colleges.

The results of the analyses and interviews are presented in a series of Tables in three parts:

Part I: The Catalog Study of Six Selected Colleges Outside the Geographical Area of Kansas and Missouri.
Part II: The Catalog Study of Selected Colleges in Kansas and Missouri.
Part III: The Interview.

Six related questions are posed, the answers to which are to be found as a result of the catalog analyses and the interviews:

1. What have been the stated philosophies of purpose of the institutions? If there have been mutations in these philosophies, what have they been?

2. What have been the philosophies toward the fine arts, particularly music, of these institutions? What have been the mutations, if any?

3. What changes have occurred in the curriculum, academic administration, faculty and student status that would indicate a change in philosophy of music education? If there have been changes in these, what have these been and what philosophical mutations are implied?

4. To what extent does practice agree with stated philosophical objectives?

5. To what extent is creativity in the fine arts encouraged or required as part of the liberal arts curriculum?

6. How adequate are the offerings implied or stated music education philosophy in terms of contemporary psychological and aesthetic theory?

The study opens with a preliminary historical survey of music in higher learning before 1700 beginning with the Aristotelian tradition; and of music in the liberal arts colleges of the United States 1631-1900, with the influence of early European Universities from 1600 considered. The author attempts only to report the basic philosophical concepts which have influenced the course of music within the liberal arts tradition and to show their relationship to and incidence within today's liberal arts college. Although Cady disclaims completeness in this presentation, the section is nonetheless lengthy, although not uninteresting.

Because mutations are functional changes, "misguided or not," and develop from the structural potentialities of the organism, the analysis of catalogs is directed not only toward written statements of philosophy but toward the following as well: changes in administrative structure, faculty status, degrees offered, accreditation toward the Bachelor of Arts degree, accreditation by the National Association of Schools of Music, the status of music students and the courses offered in music and related areas.

In an examination of the catalogs for "Educational Philosophy Including Implications for Nonverbal Education Experience," the statement most frequently made during the years covered by the study was that offering prospective students an "education for cultural values and knowledge." This statement was either made or implied some ninety-one times. (Catalogs which Cady examined were those at the decades beginning with 1900, 1910, 1920 and so on.) This can be compared to thirty-five statements claiming the "imparting of liberal education;" twenty-eight for "education of the whole person;" twenty-four for "aesthetic appreciation or development." Only sixteen statements were made implying provision for the "development of classical symmetry;" only fourteen for the "appreciation of the beautiful;" ten for "self-expression through the fine arts;" and four for the "development of emotional maturity."

Concerning music specifically, the most consistent idea expressed was the necessity of music as a part of liberal education.

Cady points out that while two seemingly incompatible ideas grew hand in hand from 1930 on, that is, the education of the amateur and the training of the professional musician, music studies subsumed to professional ends and the liberal education of the amateur was secondary. While three of the six colleges outside of Kansas and Missouri had always offered a professional program in music, three have never offered such courses. In the Kansas and Missouri colleges between 1920 and 1940 avowed professional programs increased from twenty-six to forty-two with the principal objective the production of performers. The production of teachers was also one of the professional programs but as revealed in the analyses and interviews this often was included of necessity (to meet the student market and to enable the music department to survive) rather than by choice.

Of the twenty-five liberal arts colleges studied only one of the six and three of the nineteen were accredited by the National Association of Schools of Music by the year 1960.

All of the arts suffered to a certain extent from dichotomy. The six schools were more consistent in offering all of the arts than were the nineteen. While all the Kansas and Missouri schools offered music they did not necessarily offer courses in other areas such as art and drama.

Cady's findings reveal a gradual acceptance of music in the liberal arts offerings as integral rather than tangential. By 1960 only one college in each of the two groups did not allow music equal status with other subjects. Of the six schools, four offered a Bachelor of Arts degree in Music by 1960, and in the nineteen schools, seventeen offered this degree. Totally the colleges of Kansas and Missouri "assumed a more enlightened position concerning the value of the arts than their sister institutions in other states."

Administratively all of the twenty-five schools had an organization for music by 1960. Eighteen of the twenty-five were Music Departments in the Liberal Arts college. It was here (in these separate departments) that the musician, both teacher and student, formerly shunned by the "college" faculty, acquired academic respectability.

Interviews

Fourteen questions were formulated to give depth to the study by seeking subjective response to inquiry into the general educational philosophy of each of the nineteen schools, the philosophy of educational experience, the philosophy of music education and professionalism in the liberal arts. In every case the interviewer sought the highest official in the music department (head) but in some cases found it necessary instead to interview the president of the college, dean, or other member of the music department faculty.

The interviewer found that with respect to the meaning of liberal arts and the nature of the general educational philosophy at the particular schools, most were vague and indicated (to the interviewer) a lack of interest in and curiosity about the heritage of the liberal arts. Only two gave responses pertaining to creative and critical thinking. Four indicated that liberal arts at their particular school meant a "broad education;" four, a "well-rounded education;" and four, content or "subject matter." Five gave no direct answer to the question.

To the question, "Is there a fundamental difference between applied music and the theory of music?", there were twelve no replies and six yes. The purpose of this question was to determine if remnants of the Aristotelian dichotomy remained in the thinking of educators and was related to a question as to the reasons for use of the term "applied music." Here twelve indicated that "tradition" was the reason for its continued use; four stated that it was a "commonly used term" and five replied that it referred to an "application of theoretical knowledge."

To the question, "Why do you offer teacher education in music?", only four schools could give a good (liberal arts) case for teacher education, that is, to educate the individual to function totally in society. Most replies indicate a need to meet the student "market demand," "insurance for music majors," and "necessary for departmental survival."

The majority indicated that their institutions contributed something to the development of the emotions; however, few knew the fundamental difference between music and the other arts - eleven replied that there was no fundamental difference and only four indicated that music's distinct contribution is its "aural element and the resultant physical response to it." According to Cady, much more was done in contributing to the development of the emotions at the various institutions than the subjects realized.

Results

The results of Cady's investigations show that at the beginning of the century music was in an organization tangential to the midwest liberal arts colleges which offered the Bachelor of Arts degree. Because of demands the philosophy concerning it changed from one of proscription (in all but two cases) to one of acceptance and even prescription in some instances. While the exact philosophical concepts at the beginning and close of the period (1900-1960) were difficult to determine, it is believed that the diminishing effect of the Aristotelian dichotomization of human knowledge and a more realistic understanding of the needs of man were involved.

With respect to the related questions, Cady found that:

1. Statements of philosophy changed in emphasis from the concern for passive learning of a cultural nature toward one of more concern for the nonverbal, nonmathematical phenomena in human psychological organization.

2. There was an increase in statements on professionalism - from narrow professionalism in departments separate from the college, to broader purposes in the college proper.

3. Music moved from a position as a pariah to one of apparent equality in the liberal arts college. While only certificates in music were issued in the early years of the century, the Bachelor of Arts in music was offered by all but two colleges in 1960.

4. Expressed philosophical ideals did not coincide with the real (more practical) reasons for offering music.

5. None required creative experience in fine arts except in the usual verbal areas. There seemed to be a general lack of understanding of the nature of nonverbal experience and a consideration of creativity in this area unimportant.

6. Institutions were committed to the Greek ideal in terms of verbal and mathematical symbolization while making an exception of music and (in a few cases) other arts. In general they failed to provide adequate educational experiences for the total human being.

Cady's report is very well done. The style and text are interesting and clear. It should prove to be provocative to more than a few music educators in music departments of liberal arts colleges. One might wonder whether the study had indeed a national complexion despite the inclusion of six out-of-area institutions. Certainly a large cross-sectioning of the country in connection with this investigation would be more than is required, and the inclusion of the six did indeed contribute to the overall worth of the project. But a somewhat larger coverage might have dispelled somewhat the notion that the outside schools were all from the eastern seaboard. Perhaps the more traditional liberal arts school was what was desired.

The author professes and a study of the dissertation reveals a sympathetic attitude in the investigation and in the presentation of data. The difficulties of the often beleaguered music department in the small liberal arts college are effectively portrayed from a new point of view with implications for departments within larger institutions.

Cahn, Meyer Martin. Problems of Music Appreciation Teaching as Perceived by Students and Teachers in Northern California Colleges and Junior Colleges.* Stanford University, 1960.

Reviewed by Genevieve Hargiss

The purpose of this study was to define and diagnose problems in teaching music appreciation as part of general education. The following questions were asked:

1. What teaching behaviors do students perceive as effective? ineffective?
2. What teaching behaviors do instructors perceive as effective? ineffective?
3. What are the areas of greatest agreement? disagreement?
4. How do writers in the field view these perceptions? Do they consider them at all? What outstanding opinions are expressed?
5. From the above sources, what broad and underlying problems may be described?

It was believed that this approach would lead to a view of music appreciation teaching which would be based upon actual experience rather than theory or conjecture. While it would take into account the previous knowledge in the field, it would organize this knowledge systematically and relate it to specific experiences and specific problems.

Procedure

The critical incidents technique was used as the basic method of research. This is a set of procedures for (1) collecting observed incidents having special significance and meeting systematically defined criteria, and (2) applying these observations to the solution of problems. In this case the incidents were teacher behaviors as perceived by students and also by teachers themselves.

The subjects were teachers of, and students enrolled in, undergraduate music appreciation courses offered in general education programs of colleges. Every music appreciation teacher (at the college level) in northern California was invited to participate in the study and they all accepted; the total number was 38. The student subjects were members of 17 classes in six junior colleges and six four-year colleges, also in northern California; the total number was 523. It was believed that the inclusion of the junior colleges made the sample more representative of the college population.

Incidents were collected from the students during group interviews. The investigator visited the classes and supervised the filling out of forms on which were recorded the students' descriptions of teacher behaviors which they remembered as being particularly effective and those which they remembered as being ineffective. The forms included a written statement of the goals of the music appreciation course. They also contained leading questions to encourage the students to respond in the

*order number 60-1345, microfilm $3.50, xerox $12.15

direction of the classroom behavior of the teacher. The researcher had previously tried out the forms in classes at his own college. He found that he often had to ask a student to provide more specific detail, to respond more frankly, or to clarify a point he was trying to make.

The teachers were interviewed individually. They were asked to relate the same kinds of incidents, i.e., their own teaching behaviors which they believed had been effective and those which had been ineffective. (They had great difficulty providing ineffective incidents.)

After the incidents were collected, the actual descriptions of teacher behavior were screened out. Similar behaviors were grouped together and organized into categories. Within each category the effective behaviors noted by the students were listed in rank order according to frequency of mention; the effective behaviors noted by the teachers were also listed in rank order according to frequency of mention. The same procedure was carried out with the ineffective behaviors. The student and teacher listings were compared by calculating Spearman rank order correlation coefficients (rho's). The rho's were transformed to the appropriate t and tested for significance at the .05 and .01 levels.

Another part of the procedure was a review of the opinions expressed by writers of music appreciation textbooks and by critics of musical taste in America. The differences between the perceptions of the student and teacher subjects of the study were discussed with reference to the literature; the comparison was then a three-way one from which emerged the major problems in teaching music appreciation.

Summary of the Results

Totals of 490 effective and 350 ineffective incidents were reported by the students; from them were derived 1,184 effective and 606 ineffective behaviors. Totals of 185 effective and 91 ineffective incidents were reported by the teachers; from these were derived 419 effective and 168 ineffective behaviors. As they were sorted and resorted, they were assigned to categories and subcategories. Finally, the categories were organized into four broad areas: (1) selection of materials, (2) presentation of materials, (3) evaluation procedures, and (4) personal factors. An entire chapter was devoted to the presentation and discussion of the data in each of these areas.

The effective behaviors as perceived by the students were those which took into account their interests, abilities, and backgrounds. Their interests were stimulated by the selection of certain kinds of music and background study materials, and by student participation. Behaviors which clarified included the giving of generous explanations, the careful use of terminology, the use of audio-visual aids, the giving of a variety of musical examples, and the use of analogous nonmusical experiences to illustrate musical concepts. Behaviors which simplified included the use of small amounts of learning materials, slower pacing, a limited use of technical terms, generous test preparation, and frequent repetition and review.

The ineffective behaviors as perceived by the students were those which did not take into account the need for interest, clarity, and simplification. They included using music and materials which were complex, difficult, strange, or lacking in interest; making explanations and presentations which were not clear or which were made too quickly; making assignments and presentations of excessive length and difficulty; giving tests which were not thoroughly prepared for; and not showing respect for students' views.

The teachers were more particularly concerned with the music, its selection, presentation, and student response to it. Generally, they were concerned with a narrower range of behaviors than were the students, and at a broader level of abstraction. The behaviors which they mentioned as effective are well-known professional practices. They included encouraging students to be active; relating instruction to the students' backgrounds and abilities; elaborating and giving varied explanations; and outlining, organizing, planning, and making clear student responsibilities.

The teachers did not provide a greater number of ineffective incidents, but the behaviors derived from those they did mention were related to the factors noted by the students; namely, these were interest, complexity, and failure to communicate effectively. Ineffective behaviors relating to interest included the selection of music which did not enlist or hold student interest, and the failure to answer questions. Ineffective behaviors relating to complexity included rapid pacing of instruction and using complex materials and procedures. Failure to communicate clearly was illustrated by such behaviors as not emphasizing or exaggerating main points, insufficient use of the blackboard for illustrative purposes, and not taking into account the students' backgrounds and abilities. Other considerations without discernable focus were also mentioned, such as a distracting environment, becoming sidetracked while answering questions, and giving too much emphasis to a composer's personality at the expense of his musical style.

The search of the literature brought to light many interesting opinions and convictions. While all of them cannot be included in this review, the following are examples:

"What the lay listener needs is not to acquire facts, but to cultivate senses: the sense of rhythm, of articulation, of contrast, of accent."[1]

"The sensuous materials of music are dedicated first toward the production of meaningful tones that are understood in no terms other than tone."[2]

"While everyone hears music differently, there is a common ground from which all musical experiences grow. That source is sound itself. All music is based upon the power of sound to stir our senses and feelings."[3]

"Related to belief in the power and significance of aesthetic experience is the belief in the seriousness, purposefulness, and 'logic' of the creative artist and the work he produces....The story of the composer's 'life and hard times,' the circumstances under which a particular composition was written, the testimonials to the greatness of the work to be heard, and so forth, aid appreciation by strengthening belief and creating a willing attitude."[4]

Emergent Problems

A comparison of the students' perceptions, the teachers' perceptions, and the opinions expressed in the literature did indeed bring to light many problems in teaching music appreciation. They were discussed under the same headings that had been used for the behavior categories: (1) selection of materials, (2) presentation of materials, (3) evaluation procedures, and (4) personal factors.

Selection of Materials

Selection of music. The vastness of the repertoire and the many different values by which music may be judged contribute to the problem of musical selection. The teacher's task is to select music of interest to students and examples which are appropriate to the subjects of study, while at the same time bringing the student into direct and intimate contact with the best of our broad musical heritage.

Selection of relevant background materials. Selection of study materials is required because of the many subject areas of vast scope and detail which are related to the listener's task. The problem is what to omit. (Faculty focus is apparently on style and structure of the music itself, whereas students seem to prefer nonmusical discussion of the composers' lives and personalities. There are writers supporting both views.)

Presentation of Materials

Lecture techniques. The fundamental problem here is to achieve a communication which is clear and effective and which takes into account the abilities, interests, and backgrounds of the students. Because these abilities, interests, and backgrounds are so varied and frequently widely separated from the goals and demands of the course, communication difficulties present themselves.

Use of audio-visual aids. While the use of audio-visual aids is standard education procedure, there are questions as to whether visual devices increase the range and accuracy of aural perceptions, whether they give a true picture of the ideas they represent, and whether they contribute the most meaningful content to the topic of study. Individual preferences for audio-visual aids raise other questions concerning the bases upon which teachers select and use them.

Use of students' contributions. Although there is broad agreement concerning the usefulness of student participation, certain questions are raised with regard to how useful it really is. Music appreciation is mainly a thinking, feeling, and imagining response; conspicuous activity may not always be needed.

Presentation of music. Although there is agreement that music itself should be the focal point of the entire course, some questions exist concerning the teacher's role in explaining it. There are arguments for and against the explanation and analysis of music. Until this problem is thoroughly explored and resolved, the music appreciation teacher will have to take a position on one side while knowing that there are eloquent arguments on the other.

Evaluation Procedures

While there are many different kinds of tests now in use, there are no reliable or valid tests for the aesthetic goals of the course. The music listening experience includes a variety of introspective reactions such as associations, memories, sensations, and other responses of a personal nature. While some writers suggest that the course is unexaminable, others feel that there is an important body of knowledge, the testing of which will reveal student progress, point up deficiencies, and serve as incentives to learning.

Personal Factors

Professional qualifications. The qualified music appreciation teacher is endowed with broad musical knowledge, reliable taste and judgment, performance ability and other skills which relate to the creative process, to the learning process, to students' needs, and to related arts and disciplines. Training for the music appreciation specialty is rare; many teachers are assigned to the task with little preparation.

Relations with individual students and with the class. Harmonious interpersonal relations increase teaching effectiveness. They help students and teachers to achieve psychological needs, to channel and extend drives, to promote good morale and productivity. Good personal relations are not always easy to achieve. It is not always easy to learn students' drives, needs, interests, and purposes. Students' distortions and resistances are often caused by factors outside the teaching situation. Often, too, the instructor projects into the classroom his own unresolved problems in symbolic disguises, and this, too, affects interpersonal relations and learning.

Instructors' personal characteristics. Students particularly favor teachers who are friendly, enthusiastic, relaxed, confident, patient, and who use humor in their teaching. They disfavor those who are tense, nervous, unpleasant, or whose speaking voices are monotonous or too soft. Poor morale may cause these behaviors, but more often they are caused by long-standing personal characteristics which include the inner dimensions of the teacher's own anxieties.

Conclusions

There is a common core of agreement between students and teachers as to the behaviors which lead to effective and ineffective instruction. Perhaps the most significant fact about this agreement concerns the nature of the behaviors involved; their outstanding characteristic is that they tend to confirm professional theory and practice. A good music appreciation teacher is a good teacher. He is not exempt from accepted principles by which he selects his content, presents it, and relates it to his students.

There is also some lack of agreement between students and teachers. Students are more concerned with presentation practices which simplify and make clear, with biographical data about composers, with test preparation, and with teachers' negative personality characteristics. On the other hand, teachers are more concerned with music itself and with making students active in the learning process. It may be concluded that these perceptual differences are the result of differences in viewing the function of general education and its specific objectives.

Another conclusion is that the principles of aesthetic communication apply quite appropriately to teaching music appreciation and, in fact, enhance teaching effectiveness. (Throughout the study, devices were suggested which pertained to unity, contrast, simplicity, clarity, coherence, interest, dominance, and vitality.) Music is a nonverbal art. Its communication and meaning are conveyed by organized sound moving in time. Thus its effect is achieved through its symbolic movement. Perhaps, then, what is needed is greater understanding and use of nonverbal approaches to teaching music appreciation which involve sound, shape, and movement.

Finally, teachers are apparently unable to evaluate their own teaching critically, on a broad scale, and in a nondefensive manner. This is particularly true when it comes to recognizing their personal shortcomings.

Implications for Practice

The results of the study imply that music appreciation teachers should:

1. Show concern for student interest by
    a. Selecting music that is simple, short, rhythmic, and familiar.
    b. Giving liberal explanations of musical forms, elements, and styles.
    c. Making use of the students' nonmusical common experience.
    d. Encouraging student participation that is verbal, physical, and musical.
    e. Using audio-visual aids such as diagrams, pictures, and scores.
    f. Liberally repeating musical examples.
    g. Understanding and respecting students' musical opinions from a psychological and sociological point of view.

2. Utilize behaviors which lead toward simplification, such as
    a. Selecting smaller amounts of learning material and placing emphasis upon broad issues rather than massive detail.
    b. Proceeding more slowly so that students do not feel harrassed or rushed.
    c. Stressing main points and issues, exaggerating them, and elaborating upon them.
    d. Minimizing technical language and defining technical terms when they are needed.
    e. Developing learning material sequentially.
    f. Constantly summarizing and reviewing learning material.
    g. Making use of the students' nonmusical common experience.
    h. Using the technique of comparisons with widely disparate elements.
3. Use nonverbal means to point out musical concepts, such as
    a. Repeating musical examples.
    b. Making liberal use of the technique of comparison.
    c. Relating music to color arrangements, photographs, and drawings which describe elements of music.
    d. Relating music to appropriate and descriptive shapes which illustrate musical structures.
    e. Encouraging appropriate movement including dancing, conducting, tapping, clapping, stepping, swaying, and other gestures.
4. Apply the principles of aesthetic communication through the use of
    a. Unity (repetition, verbal and musical).
    b. Contrast (the technique of comparison).
    c. Dominance (dealing with main principles or ideas).
    d. Variety (selecting varied musical examples, elaborating).
    e. Balance (between music and talk, between intellectual and aesthetic factors).
    f. Procedures which will achieve simplicity, clarity, vitality, order, cumulative interest, and, occasionally, surprise.

Comments

The critical incidents technique is helpful when dealing with materials and insights that are strongly subjective. In the opinion of the reviewer, this study is an example of its best use. However, as Dr. Cahn himself pointed out, the method does have its limitations. The determination of categories for the collected incidents was still a matter of considerable subjectivity, and only those views which could be put in writing were usable. The responses of inarticulate students could not be dealt with, nor could nonverbal responses.

The study set out to define problems. This it certainly did in a most thorough and skillful manner. The purpose was not to provide solutions, although implications for some solutions were contained in the findings.

Students cannot be blamed for the emphasis that is presently being put upon grades in the evaluation of young people, and the concern with test preparation that was expressed by the subjects of this study is understandable. If the testing was of knowledge about music, this may be why the students were particularly interested in analyses of structures, in biographical data about composers, and in having them simplified and clarified.

It is interesting to think about the people of all ages who are buying recordings of great music to enjoy in their homes. That their number has dramatically increased since the advent of high fidelity is evidence for the impact of superb tone itself. While this in no way disproves the contention that enjoyment of music is enhanced by knowledge, it does seem to indicate that the aesthetic response is something quite different.

Dr. Cahn's study brought to light many problems which are encountered in teaching music appreciation courses. How to test for aesthetic objectives is perhaps the most difficult.

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Calder, Robert W., Factors Influencing Male Music Education Graduates of Certain Pennsylvania Institutions of Higher Education to Leave or Not Enter the Profession. The Pennsylvania State University, 1962.

Reviewed by Gaylord H. Farwell

In arriving at a rationale for justifying this study, the author provided references from the literature substantiating his statements that numerous studies had been done concerning teacher supply and demand and the reasons why persons who had trained to become teachers either left the profession after a short time or did not enter the profession. However, none of these studies had been concerned particularly with the sub-group of music educators. Mr. Calder also furnishes references to substantiate his statement that there is a shortage of public school music educators.

Purpose

The primary purpose of this study was to determine the causal factors for male music education graduates of nine Pennsylvania institutions of higher education leaving the profession of music education. A secondary purpose was to determine the causal factors for qualified male music education graduates of nine Pennsylvania institutions of higher education not entering the profession.

Limitations

Since at least six surveys have shown that the majority of women who leave the profession do so for marital or family reasons, this study was limited to male music educators. The study was limited to a sample of male graduates of nine Pennsylvania colleges and universities for the years 1950 through 1959. The "profession" of music education as used in this study included only public school music teaching on the elementary and secondary levels. The writer also recognized the limitations of a questionnaire study and certain steps were taken to alleviate some of these weaknesses.

Procedure

The sample of Pennsylvania institutions of higher education was composed of two universities, two state colleges, two liberal arts colleges, two parochial colleges, and one professional college. Two specially constructed questionnaires were used to solicit information from 207 individuals - 119 who had left the profession and 88 who did not enter the profession. A 92.3 percent return was achieved on the questionnaires; a total of 191 questionnaires. Eight of the returned questionnaires were not usable. Thus this study is based on the information compiled from 183 completed questionnaires.

Two methods were used as a check on the reliability of the instruments. To check the respondents' consistency, two items in the questionnaires were repeated, appearing in different parts of the questionnaires with the wording slightly changed. An item analysis was done on these two pairs of items using the formula

$$t = \frac{(\bar{D} - \bar{D}_p)}{\sqrt{\frac{N\Sigma D^2 - (\Sigma D)^2}{N^2\ (N - 1)}}}$$

A comparison of these two sets of items yielded a "t" of 1.35 and 0.57. This would indicate that differences on these items were probably due to chance, and that the respondents' consistency was quite satisfactory.

A second check was made on respondents' consistency through the use of fifteen follow-up interviews. The interviewees were selected by random sampling using dice and the interviews were conducted 6 months after the respondents had returned the questionnaire to minimize the chance of exact recall on the sixty items.

After the questionnaires were tabulated, they were treated statistically to show the following for each item: the percent indicating that the item was influential; the mean degree of influence; the standard deviation; and the "t" ration between state college, university, and liberal arts graduates, teachers who taught three years or less and those who taught five years or more, teachers of either instrumental or vocal music and teachers of both, teachers of all grades and secondary teachers, and teachers who left the profession and graduates who did not enter.

Results

The two most important factors influencing the decision to leave the profession were identified as follows:

1. Opportunity for other position offering better salary, better working conditions, or more prestige

2. Opportunities for advancement too limited in public school music teaching.

An additional thirteen factors were identified.

3. Unsatisfactory maximum salary potential.

4. Inadequate physical plant and equipment.

5. Starting salary too low.

6. Administration disinterested in and unsympathetic toward your problems.

7. Administration seemed to consider music program primarily for public relations.

8. Lack of interest by administration in raising musical standards of school and/or community.

9. Unsatisfactory teaching schedule.

10. Student attitudes not conducive to raising and maintaining musical standards.

11. Necessity of finding additional employment to supplement public school salary.

12. Insufficient respect for your capabilities by administration.

13. Change in standard of living values by you and your wife.

14. Musical immaturity of your students.

15. Your dissatisfaction with the type of music with which you were working.

In analyzing the relationship of these items with the variables of his study population, the writer found that as a teacher's length of service increases, his tolerance toward these particular items decreases. Secondary teachers indicated a greater general dissatisfaction than the teachers of all grades. The dissatisfactions were primarily in the area of maintaining control of students and non-musical aspects of public school music teaching. Although financial factors seem to be the most important factors influencing the decision to leave, 76.2 percent of the respondents indicated that they would not have left for financial reasons alone.

The five most important reasons for qualified graduates not entering the profession were identified as follows:

1. Unsatisfactory maximum salary.

2. Low starting salary.

3. Opportunity for position offering a better salary, better working conditions, or more prestige.

4. Limited opportunities for advancement in public school music teaching.

5. Musical immaturity of public school students.

Conclusions and Recommendations

To enhance the holding power of the music education profession for male graduates, Mr. Calder concludes that there needs to be an improvement in: minimum salaries and maximum potential salaries; problems related to school administration such as "education" of administrators as to the problems, purposes, and principles of the music education program; increased attention during the music educators' undergraduate years to such problems as the total school program, the philosophy of the music program, how to secure the cooperation of the administration, etc. The study indicated that the liberal arts graduates expressed more concern with educational problems rather than financial or musical problems and the recommendation was made that the liberal arts colleges carefully evaluate their student teaching programs and professional education offerings.

Implications for Further Research

1. Research should be conducted to determine the reasons for the lack of communication between music educators and school administrators.

2. Research should be conducted in other states and/or on a national basis to discover whether reasons for leaving or not entering the profession vary with locality, and to compare Pennsylvania with states having strongly developed music education programs and states having poorly developed music education programs.

3. Research should be conducted to determine the relative effectiveness of the different types of institutions preparing Pennsylvania music educators, and the reasons for such effectiveness.

Comments

It is the judgment of this reviewer that this study was conducted in an intellectually honest manner; the limitations of the survey type study were recognized; and appropriate techniques were utilized in selecting the sample, construction of the survey instrument, and statistically treating the data. If we can accept the thesis that one of the obligations of the music educator is to perpetuate his profession, this study has implications for the guidance function of the classroom teacher in both the public schools and the institutions of higher education. Potential recruits to the music education departments of colleges and universities and music educators in training are entitled to as realistic an appraisal of their future life's work as is possible to provide. A high drop-out rate in any aspect of education is expensive in terms of finances, effort, and facilities. The holding power of the profession would conceivably be enhanced if potential music educators were in possession of an adequate concept of the many ramifications of the profession of music education.

Chrisman, Lee. Preparation and Experience of the Music Teacher in Higher Education. University of Southern California, 1962.

Reviewed by James A. Wiltshire

As music has attained a prominent place in the curriculum of the American college during the twentieth century, the development of music programs in these institutions has provided great opportunity for both cultural enrichment and professional study. These programs have been diverse in their offerings to meet the needs of students with varied musical backgrounds. The resulting varied musical experiences eventually necessitated the employment of several types of music teachers. While providing increased appreciation for the general college student, areas of professional study in music came to include music education, musicology, composition and applied music.

The Problem

The purposes of this study were: (1) to assess the preparation and experience of the college music teacher, (2) to ascertain what educational qualifications and experience his administrative officers most desire, (3) to compare his own judgments in this regard with those of his administrators, (4) to determine his pattern of preparation in the areas of liberal arts, music, and professional study, and (5) to identify his patterns of experience in terms of professional performance and his levels and areas of previous teaching.

The importance of this study is shown in the fact that the graduate school is considered to be the primary source for college teachers. yet, according to the President's Commission on Higher Education report of 1947, "college teaching is the only learned profession for which there does not exist a well-defined program of preparation directed toward developing skills which it is essential for the practitioner to possess."[1]

This study endeavors to show the relative importance of certain criteria in both the preparation and experience of the college music teacher through an evaluation by teachers and administrators. Degree programs cannot be considered the panacea of college teaching, although it is apparent that such study weighs heavily in the determination of who shall teach at the college level. While many educational leaders have outlined desirable traits and characteristics of the college teacher, few have identified methods by which they may be acquired. Since there has been no specific system of certification employed to determine college teaching eligibility, this responsibility has been assumed individually by institutions of higher learning.

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[1] George F. Zook, Higher Education for American Democracy: A Report of the President's Commission on Higher Education. New York: Harper and Brothers, 1947.

Limitations of the Study

Certain restrictions were necessary in order to effectively employ a questionnaire for obtaining data. Limitations of the study are:

1. The survey was conducted in those institutions which were full members of the National Association of Schools of Music on January 1, 1962.

2. The investigation included only those administrative officers who signified a willingness to complete a questionnaire.

3. The teachers whose responses were included in the study were selected by a random sampling technique. Selection was made from faculty lists of those institutions whose administrative officer replied affirmatively.

4. The criteria contained in each form of the questionnaire were subject to the individual interpretation of each person participating in the investigation.

5. A curriculum analysis of graduate degree programs, i.e., of course, is not included in this study. Areas of study included in such programs, however, comprised the criteria for evaluation in order that patterns of preparation could be studied.

Methodology

This study endeavored to discover patterns of preparation and experience of college music teachers; a questionnaire was designed to survey the backgrounds and opinions of those currently engaged in teaching music at the college level. Although the field of music has wide diversity, teachers were grouped in four primary areas of instruction; namely (1) music theory and/or composition, (2) music history and literature, (3) music education, and (4) applied music.

In order to study both the present status and desired status of college music teachers, the questionnaire was devised in two forms. Form A for college music administrative officers was designed to ascertain requisite areas of teacher preparation and experience, and Form B for college music teachers was designed to ascertain the sum of all work completed, both academic and professional, and to provide the individual evaluation of such preparation and experience by those currently employed.

For the purpose of showing the extent of agreement and disagreement certain items were included in both forms of the questionnaire. The elements of preparation which were common to both forms were: degrees and subjects by areas--liberal arts, music, and professional education. The elements of experience were: other full-time college teaching, public school full-time teaching, private teaching, professional performance, and graduate assistant and teaching fellow responsibilities. A total of thirty-five items was included to be evaluated by administrators and teachers; in the administrator's form, it was necessary to react to each element four times, once for each type of teacher.

Those elements which dealt with areas of preparation were derived from an analysis of college degree programs in music, both undergraduate and graduate. While college music curriculums vary significantly from school to school, the variance is usually in the amount of study in each area and not in the area included. No attempt was made to solicit information relative to courses per se; instead, the study was confined to obtaining an evaluation of the relative importance of subject-matter areas. In the liberal arts area, four categories were included--humanities, social sciences, natural sciences, and mathematics. Since music was considered to be the major field of concentration, specific skills as well as areas of study were included: theory and/or composition, history and literature, applied music (major), voice (non-major), piano (non-major), other instruments (non-major), conducting, ensemble and chamber music, musical organizations, and music education.

At the conclusion of the questionnaire, space was provided for the administrator to suggest unique competencies and/or characteristics he considered important in the employment of a teacher in any of the four areas of music instruction.

In Form B, part one, teachers were requested to provide information concerning present positions. This information included the primary area of teaching, other areas of teaching, advisory responsibility, participation on college committees, and membership in professional organizations. Part two was concerned with preparation and included types of degrees earned, major areas of study, major performance medium, number of years studied, participation in high school and college musical organizations, and types of terminal projects completed in graduate study. Part three was concerned with experience and number of years of each type. These items included other full-time college teaching, public school full-time teaching, private teaching, and professional performance. At the conclusion teachers were asked to indicate when they decided to become a college music teacher and who encouraged them most. The teachers were also asked to suggest any courses or experiences not included in their previous study which they felt would benefit the quality of their teaching.

Procedure

Return postal cards, describing the study and requesting an indication of willingness to participate in the study by completing a questionnaire were mailed to the administrative officer of each full-member school of the National Association of Schools of Music. Of the total sent to the 226 schools, 161 cards were returned; 138 replied in the affirmative, nineteen replied in the negative, and four were received too late for inclusion. The specific population was then determined to be the 138 institutions of the National Association of Schools of Music whose administrative officer had returned an affirmative reply.

A random sample of 40% of teachers was selected from an alphabetical listing of the faculty members in each of the 138 schools. An attempt was made to include only full-time personnel in the selected sample. Since the rank of instructor varied in definition and titles such as lecturer, teaching associate, etc., the study involved only those teachers with the rank of assistant professor, associate professor and professor.

Seven hundred and fifty-five questionnaires were mailed--138 of Form A to administrative officers and 617 of Form B to teachers.

Four hundred and eleven questionnaires (approximately 55 percent) were returned--102 (approximately 74 percent) of Form A, and 309 (approximately 50 percent) of Form B. In order for the comparison of responses on Form A and Form B to be valid, no questionnaire completed by a teacher was included in the tabulation unless a completed questionnaire was received from the administrative officer in the same school; correspondingly, no questionnaire completed by an administrative officer was included in the tabulation unless a completed questionnaire was received from at least one teacher in the same school. Therefore, the tabulation was made from eighty-four usable questionnaires of administrative officers (approximately 61 percent), and 230 usable questionnaires from teachers (approximately 37 percent).

Three methods are employed in the treatment of data:

1. The elements of preparation and experience of current college music teachers are reported in percentage values.

2. The evaluations of elements of preparation and experience by both administrators and teachers are reported in mean ratings.

3. The comparisons of ratings of administrators with those of teachers are reported in chi-square values.

When making the comparison of the ratings of administrators with those of teachers, each response was "paired," i.e., the individual teacher with his administrator. These responses were recorded on contingency tables in order to compute the amount of agreement and disagreement between teachers and administrators. "Agreement" was defined as the result of the teacher and administrator giving the same rating, or differing by only one point, on a six-point scale. Each table consisted of thirty-six cells; all zero responses were eliminated. Since ratings were "independent," the expectation was 16/36 of pairs of responses as agreements, and 20/36 of pairs of disagreements. With "a" as the number of agreements, then $X^2 = \frac{(4N-9a)^2}{20N}$ and $X^2 = \frac{4\ (4N-9a)\ (4N-9a-1) + 81}{80N}$ with the correction for continuity.

Summary

The number of teachers whose instructional responsibility included their primary preparation area only varied with each category: music theory and/or composition, 35 percent; music history and literature, 26 percent; music education, 44 percent; and applied music, 46 percent. The most prevalent secondary area of responsibility was in applied music. While previous teaching experience differed with the teachers in each area, 51 percent had taught in college, 49 percent in public schools, and 69 percent privately before accepting their present positions. The mean of the length of time in the present position was slightly more than eleven years. Preparation, as indicated by earned degrees revealed that 98 percent possessed a bachelor's degree, 93 percent a master's degree, and 37 percent a doctor's degree. Twenty-three percent of the teachers reported varying numbers of semester hours beyond the master's degree. Of the several kinds of each degree reported, 51 percent held the Bachelor of Music, 56 percent the Master of Music, and 20 percent the Doctor of Philosophy.

The relative importance attributed to specific areas of study for the several types of teachers was determined. In the field of liberal arts, study of the humanities was considered essential for all teachers, while lesser importance was attached to study of the social sciences, natural sciences, and mathematics. Within the field of music, study in the primary area of teaching was considered mandatory for all teachers. Study in the areas of music theory, music history, and applied music was rated as essential for all teachers; individual differences were further identified in each area of teaching. Those secondary skills which were considered important for teachers in each area were: piano for music theory; none for music history; piano, voice, other instruments, conducting, ensemble and chamber music techniques, and musical organization participation for music education; and piano, ensemble and chamber music techniques, and musical organization participation for applied music. Study in the area of professional education was rated as important only for music education teachers. The evaluation of terminal projects in graduate study programs showed both master's theses and recitals rated as important for all teachers, with recitals considered most important for applied music teachers. The doctoral dissertation was indicated to be essential for all teachers, and, again, recitals were rated important in doctoral study for applied music teachers.

Experience prior to the present position included three types of teaching, eight types of professional performance, and graduate assistant and/or teaching fellow responsibility. Other full-time college teaching was considered most important for music theory and music history teachers, full-time public school teaching for music education teachers, and private teaching for applied music teachers. Highest ratings in professional performance were: (1) composer and arranger for music theory teachers; (2) lecturer and author for music history teachers, (3) conductor, consultant, and member of musical organization for applied music teachers. Experience as a graduate assistant and/or teaching fellow was considered important in all areas, yet only 32 percent of the teachers had had such an opportunity.

In the comparisons of evaluations between administrators and teachers, agreement at the 5 percent level of significance (or better) was shown on 70 percent of all elements of preparation, and 27 percent of all elements of experience. While the level of significance varied with each area of teaching, general agreement was shown on all degrees and on study in the humanities and social sciences. In the field of music, agreement was indicated on music theory, music history, applied music, conducting, ensemble and chamber music techniques, and musical organization participation. Agreement also was shown on the doctoral dissertation as a terminal project. The few areas of agreement on desirable experience confirmed the wide divergence of opinions which were observed in the individual responses as reported earlier.

Conclusions

The music theory teacher.---The teacher of music theory should hold a bachelor's, master's, and doctor's degree. In satisfying the requirements for the last, he should have written a dissertation, although the performance of recitals is a valuable option. His study in the areas of liberal arts should have resulted in acquired knowledge of the humanities and social sciences. While competence in his major area is mandatory, knowledge of music history and literature is equally important. Study and achievement in the area of applied music must parallel his development in the two previously mentioned areas of study. As secondary skills, he should possess adequate pianistic ability, knowledge of other instruments, and techniques of conducting. Participation in musical organizations, along with ensembles and chamber music groups, should have occupied prominent place in his background of preparation in music.

The music history teacher.---The teacher of music history should hold a master's and doctor's degree. Perhaps the omission of the bachelor's degree indicates that many teachers in this area complete their study under the European system. In completing the requirements for the doctor's degree, he should have written a dissertation. His background in the liberal arts should have included study of the humanities and natural sciences. In addition to a thorough knowledge of his own area, he should be equally competent in music theory. His preparation should have included serious study in the area of applied music, with some study of voice as a secondary skill.

The music education teacher.---The teacher in the area of music education should hold a bachelor's, master's, and doctor's degree. In completing the requirements for the latter, he should have written a dissertation. In the areas of liberal arts, he should have completed study in the humanities and social sciences. While knowledge in his own area is mandatory, additional knowledge in the areas of music theory and music history are almost of equal importance. Closely related to competence in his own area, is achievement in applied music. Secondary skills resulting from the study of voice, piano, other instruments, and conducting are essential for his teaching. Mastery of the technique of conducting is the most important of these skills. Musical organization participation, along with techniques of ensemble and chamber music performance, is essential to his background for teaching in this area.

The applied music teacher.---The teacher in the area of applied music should hold a bachelor's and a master's degree. In completing requirements for the latter, he should have presented at least one recital performance. Study in the field of liberal arts should have included work in the humanities. Knowledge and skill in his own area are mandatory, while study completed in music theory and music history is almost equally important. Additional secondary skills should be the results of study of piano, ensemble and chamber music techniques, and musical organization participation.

Recommendations

Based on the results of this investigation, the following recommendations seem appropriate: (1) in addition to thorough preparation in a major area of teaching, serious consideration should be given to the teacher's acquiring pedagogical skills in one of the other three areas; (2) while superior knowledge of subject matter is requisite to the principal, more attention should be given to the methods of communicating it to the student; (3) since all teachers require a basic knowledge of music theory, music history, and applied music, graduate study in these areas should provide an option to meet the needs of the prospective college teacher; (4) knowledge of the humanities and/or the inter-relationship of the arts should be a vital part of the teacher's background; (5) since previous teaching experience is considered important, some form of apprenticeship teaching at the college level should be provided as a part of the graduate study program, and steps should be taken to attract teachers from other levels of teaching; and (6) since no previous studies have dealt with college music teaching, additional research should be undertaken of a more intensive nature within the several areas of music instruction.

[illegible] in [illegible] 1962, at the University of Southern California School of Education, this fine study points the way to further investigation of the several types of music teachers at the college level. In itself, it gives the first clear picture of the education and teaching experience of college music teachers and should be particularly revealing to the public school teacher who anticipates taking the big step to college teaching. It is surprising, for example, to note that the graduate assistantship or teaching fellowship which was considered as an important form of preparation by all types of college music teachers was experienced by only 32 percent of the teachers surveyed. Also significant in the comparisons of the evaluations between administrators and teachers was the agreement on the doctor's degree and doctoral dissertation for the music education teacher.

A fascinating chapter on the background of collegiate teaching, tracing the preparation and experience of the college teacher from the medieval university to the twentieth century institution of higher learning was not covered in this review, but is recommended to the scholar who is seeking background information for this level of instruction.

Christ, William B. The Reading of Rhythmic Notation Approached Experimentally According to Techniques and Principles of Word Reading.* Indiana University, 1953.

Reviewed by John W. Shepard

This study is a report of an experiment to determine the effect of "tachistoscope-metronomic" reading training on the ability to read and perform rhythmic patterns in music. The title is vague as to the specific nature of the experiment. Actually only one experimental technique is used, that of the tachistoscope with the aid of the metronome. The tachistoscope cannot be described exclusively as a word-reading technique, but rather as a device for controlling the drill situation whether it be word reading or other types of fast perception activity. The study deals with a single well-defined and well-controlled experiment.

The tachistoscope is an apparatus which exposes to view an object or group of objects, letters, numbers, or musical notes for selected brief periods of time. It might be considered as an extension of the flash card technique brought by mechanical and electric means to a highly refined state of control as to presentation and timing.

The author contends that language reading and music reading are analogous despite many dissimilarities in that both depend on the grouping of symbols into distinct perceptual units. Results of previous experimenters are described in support of this belief. However, most of the experimentation has been in the area of word reading rather than music reading and does not adequately support the position that the problems of the two kinds of reading are similar. The author states later, somewhat ambiguously, that music reading "somewhat parallels language reading." One important difference between the two is the fact that word reading involves understanding while music reading involves performance.

Most of the rather scant research in music reading has dealt with eye movement, eye span, reading rate, span of recognition, and perceptual span. This has been primarily diagnostic in character rather than prognostic. Very little has been done to develop training methods. Experienced musicians have used quite subjective approaches growing out of observation and introspection resulting in such generalized statements about music reading as, "look ahead," "read groups," "ignore mistakes," "practice," "develop confidence," and similar advice. The task of the experimenter is to incorporate this advice into specific music reading habits by an approach that is direct and controlled. This the experimenter has attempted to do with the tachistoscopic-metronomic technique.

Eye movements are the result of speed of comprehension. They are symptoms of reading habits, not causes. Therefore, "reading training must not be eye movement training, but rather, training in quick perception." Any investigation going further than the mechanical features of music reading must become psychological and the present study was not concerned with the psychological aspects of music reading.

Rhythm alone was selected for the study because the experimenter believes that the primary cause of music reading difficulty is inability

*Order number A54-986, microfilm $1.35

to group rhythmic patterns. He quotes Dalcroze, for example, as stating that, "a feeling for art may be awakened in anyone who seeks an education by and for rhythm," and that, "training in rhythm can make one musical." While this may be an oversimplification of the problem of music reading it does emphasize the importance of rhythmic awareness in music and can be accepted for the purpose of this study.

Kinesthesis is a major factor in rhythmic perception and the teaching of rhythm is synonymous with the teaching of motor control. The study of rhythm all too often becomes a study in mathematics, in proportions, and the factor of muscular response ignored. Rhythm must be interpreted in terms of action. There must be motor response to visual stimuli. It is on this basis that Christ set up his experiment.

The experiment. An experimental group numbering 11 persons and a control group of 18 persons were selected from a freshman theory class of 29 students at Indiana University. The members of the experimental group were selected at random and the remainder of the class became the control group. Both groups were given a rhythmic reading test devised by the experimenter. The test complexity was determined by the number of different characters within a pattern. Reproduction of the patterns was by tapping. The test equipment included a tape recorder, an electric metronome, a thimble, and an aluminum sheet. The metronome speed was 200 quarter notes to the minute.

Test scoring was based on number of characters tapped correctly. If the place was lost, all characters after this point in the exercise were counted wrong. If the subject relocated himself, only the incorrectly performed notes were counted wrong. Rushing and dragging cost five points.

Drill patterns. The drill patterns numbered 336, each containing from two to eight symbols in duple, triple, and quadruple meters. They were classified according to number of characters and placed on lantern slides for use in the tachistoscope. The rhythmic notation was written on the staff on a single level to eliminate pitch contour. The drill equipment consisted of the lantern slides, a Keystone Overhead Tachistoscope, a slide mask, a projection screen, an electric metronome, 11 metal thimbles, and 11 cardboard plates. The tachistoscope timer controlled the exposure time with a range from 1/100 of a second upwards. The aperture could be held open at any time for reviewing what had been previously exposed. The metronome operated at 200 beats per minute.

The rhythmic patterns used for drill with the experimental group were similar to those used in the reading test. The length of the patterns ranged from two to eight symbols. Of the thousands of possible combinations, 336 were selected as those most commonly found in actual use in music.

Drill procedures. The rhythm patterns were projected on the screen at speeds varying from 1/100 second upwards. The subjects performed the pattern by tapping immediately, all subjects tapping together. After each quick exposure the pattern was projected again on time exposure. Faulty perception and/or reproduction was corrected through practice. This immediate reinforcement with the correct solution was considered important.

There were 15 drill periods, each one hour long, covering seven and one-half weeks. Each meeting consisted of two 20-minute work periods separated by a ten-minute rest period, resulting in ten hours of actual drill. The first ten minutes of each drill period were used to orient the subjects through the use of digits, familiar basic forms, and simple rhythmic patterns. The first drill patterns contained two characters exposed at the speed of 1/100 second. When three-fourths of the class could reproduce a pattern at all speed ranges larger patterns were used. At the end of the period of drills the group was working with patterns of eight characters at 1/25 second exposure.

Findings. When the seven and one-half week drill period was completed by the experimental group, both groups were retested on the original test and the results were compared. The reliability of the test was computed by comparing the ranking of the members of the control group the first time tested with their ranking the second time the test was taken (test-retest). By this method of correlation the reliability obtained was .9837. The correlation of the experimental group by the test-retest method was .112. The very low coefficient for the experimental group indicated that the amount of improvement of the subjects did not depend on their ranking in the initial test but upon other factors. All members of the experimental group made significant gains, the lowest increment of gain excelling the highest increment of gain in the control group. After the drill period the range of scores of the experimental group was grouped at the top of the combined rank order distribution. On the second ranking all members of the experimental group ranked above the median of the combined ranking even though the median was higher.

The experimenter concluded that the ten hours of tachistoscope-metronome drill on rhythm patterns were responsible for significant gains in reading ability by all members of the experimental group. This is a reasonable conclusion. The experimenter recommends that further experimentation be carried out with this type of drill and that, ultimately, a complete sight-reading method be evolved using this technique, possibly with a closer approximation to an actual musical situation. This would, of course, include melodic, harmonic, and structural musical elements studied as isolated factors as well as in combination.

Comments. In this experiment the author has set up a good test situation with sufficient controls. However, the legitimate conclusions that can be drawn from the data are much more limited than those the experimenter suggests. Generalizations cannot be made without many more subjects than were used in this experiment. Causal relationships, too, are almost impossible to determine without applying the technique to a very large number of subjects in many experimental situations. No comparison was made between the drill technique used and any other teaching method. Instead of supporting the hypothesis that tachistoscopic-metronomic drill might have advantages over other types of training, the study showed only that subjects who received rhythmic reading drill showed a significant gain in ability over those who received no training. It is reasonable to suppose that other types of training would also have had positive effects for the experimental group over the control group. No recommendation for one type of drill technique over another can be made from this study. In order to support the contention that the use of the tachistoscope technique might be superior to other forms of drill, experiments must be carried out in which direct, empirical comparisons of results can be made.

The experiment was well carried out as far as it went. The experimenter did show that this drill method can be used for group training and that it did offer good control of the testing and teaching situation. It was a good example of the application, in one form, of machine teaching applied to group teaching of musical skills. In view of one trend in modern education, the utilization of machine techniques in teaching, more experimentation of this type should be carried on. In music, as in other areas, we cannot afford to ignore the machined programmed instruction that seems to be upon us.

Coats, Maurice D. Investigation of Practices Concerning the Accreditation of Music Curriculums in Illinois Public High Schools. Southern Illinois University, 1963.

Reviewed by William L. Johnston

In the field of education, there are two general ways to evaluate a program. The first is to use existing objectives as a criterion, measuring the program to discover how effectively it accomplishes its objectives. Where no objectives exist, measurement may be in terms of objectives derived from authority or common practice, constructed expressly for the purpose of evaluating the program in question.

The second way is to take the position that where little preliminary research has been done, evaluation in terms of objectives is meaningless. In this case the measurement is aimed at graining background information, discovering common practices and the general status of the program in question by examining representative cross-section or the total population.

Mr. Coats has taken the latter viewpoint in his study entitled Investigation of Practices Concerning the Accreditation of Music Curriculums in Illinois Public High Schools. It is a very sound approach, but Mr. Coats has chosen to limit his concern to the amount of credit offered by high schools and the amount of credit accepted by colleges. He gives little information concerning curriculum other than presenting statistics on band, orchestra and chorus, lumping all other offerings under the general title of "classroom music." His rationale for investigating accreditation is stated in the opening pages: neither the North Central Association nor state organizations recommend course credit for music and as a result there is little agreement among school administrators as to practices in this area.

Description of procedure is incomplete, but in reading through the study one finds that Mr. Coats used random sampling techniques (not described) for selecting public high schools to which he submitted a questionnaire. Since the faults of questionnaire type studies are well known, it is regretable that the author failed to discuss the construction of his questionnaire and the means by which he established its validity. His selection of colleges to be questioned was not done by random sample but rather focussed on the larger institutions in the state and a skewed picture is presented in the figures for college accreditation practices regarding high school music.

The author compared information from the questionnaire with that found in the annual reports submitted to the Office of the Superintendent of Public Instruction. There was close agreement between the two. Credits allowed for music vary from none to two units per year. Most high schools which by their enrollment figure may be called "large" offer 1/2 unit of credit for participation in a performing organization while smaller high schools offer 1/4 unit of credit per year. The "average" high school in Illinois offers 1/4 unit per year for participation in each organization. These figures and others were derived on the basis of each school as a unit without consideration of the number of periods in the school day or the actual time spent in a performing organization. Since Illinois schools range in scheduling practices from six to sixteen periods per day, a wide variance exists whose relationship to accreditation should be explored. That in the study the Chicago schools make up nearly half the student population of the state and therefore their practices assume more importance in his study than is true. Statistics given by Mr. Coats show that schools which have all four offerings, band, orchestra, chorus and "general music," compose only 65% of the AA schools, 8.6% of the A schools, less than 1% of B schools, and none of the C and D schools. Though accurate, these figures are misleading as to the percentage of the school population with access to all four musical areas, for the Chicago schools with their huge population provide all four offerings without exception. If the Chicago area schools were to be removed from the study or included proportionately, these figures would be decidedly different.

The amount of credit for music which Illinois colleges and universitites accept varies, as eleven colleges will accept two or more such credits and four colleges will accept less than two, according to the author's findings from his survey of twenty-two institutions. State supported institutions will accept any music credit the high school recognizes.

Since no effort was made to discover what reasoning lies behind the accrediting practices now in effect, the study has little to offer in the way of results except to verify the information contained in the State Office records. The author recommends that the Office of the Superintendent of Public Instruction and the Illinois Music Education Association develop a set of guidelines for recognition of high school music offerings. His recommendation is an excellent one, it is a pity that his study does not include more information to aid in such a step.

Coffman, Ashley Roy. The Effect of Training on Rhythm Discrimination and Rhythmic Action* Northwestern University, 1951

Reviewed by Alan H. Drake

Introduction. This study is concerned with the problem of the limits of improvability of students in the areas of rhythm discrimination and rhythmic action. Although the terms were never precisely defined, rhythm discrimination as tested in the study was the ability to determine whether two sounded rhythmic configurations were the same or different. Rhythmic action as tested in the study was the ability of a subject to reproduce a sounded rhythm configuration by playing it on a drum.

The effectiveness of training programs designed to improve rhythm discrimination and rhythmic action in students has important implications for curriculum and guidance work in music education. Tests which would provide accurate information concerning a student's ability in rhythm could indicate which course of study would be most effective in helping that student. However, if rhythm discrimination and rhythmic action cannot be improved by training, as some previous studies have concluded, the tests would then only be used as a guidance tool rather than a diagnostic procedure.

In Chapter 1 Dr. Coffman presents a lengthy discussion of rhythm. He quotes many eminent psychologists in a development of the argument as to whether ability in rhythm stems from hereditary or environmental considerations. In Chapter 2 a number of experimental studies dealing with his problems are reviewed. Dr. Coffman is obviously concerned about the conclusions that had been reached in some studies which tended to corroborate the hereditary view. For example, a study by Klauer[1] concluded that there is considerable doubt as to whether rhythmic training can effect rhythmic discrimination to any extent. Among the other studies mentioned, Baugh[2] and DeGraff[3] concluded that rhythmic ability and capacity to learn rhythm appeared to be largely innate characteristics.

The study. The objective of the experiment was to determine whether or not rhythm discrimination and rhythmic action are amenable to improvement with intense training adapted to the needs of each individual trainee.

Procedure. An experimental and a control group, each numbering 18 seventh and eighth grade children, were selected to serve as subjects on the basis of their low or below-average scores on the tests administered. An experimental and a control group of 12 subjects each, consisting of college men and women, were selected on the same basis. There followed a period of approximately three months during which the experimental group received approximately 12 periods of training of 50 minutes each. The training was administered privately or in small groups. The control group subjects were given no special training during this period. At the conclusion of the training period, both groups were given post tests which were the same as the pretests. In addition to the above, the five music majors who were assigned to the college-age experimental group were asked to perform piano compositions which were "rhythmic in character" before and after the training period. The performances were tape recorded and adjudicated by a panel of five trained musicians.

*Ph.D. dissertation; available on inter-library loan from Northwestern Univ.

Test instruments.

1. Seashore Rhythm Discrimination Test (1939 revision by Seashore, Lewis, and Saetveit), Series "A" for the seventh and eighth grade students, and Series "B" for the college students.

2. Coffman Rhythm Discrimination Test, Series "A" and "B", given to all subjects. (Series "A" presented rhythms in the context of melody and harmony. Familiar tunes, such as Jingle Bells and America the Beautiful were presented in pairs with the subject being asked to determine whether the two examples were the same or different.)

3. Coffman Motor Rhythm Test, given to experimental subjects only. (This test was composed of 60 rhythm patterns which were tapped to the testee who in turn attempted to reproduce the given stimulus on a drum.)

Training procedure. Intensive training was individualized as much as possible and was presented by Dr. Coffman. Some of the methods used were clapping and marching to recordings, intensive training in drumming, beating time to music, reading music, and practice in discrimination. As stated by Dr. Coffman (page 51), the training used throughout the entire experiment was "so designed as to allow the experimenter to adapt the remedial methods to the particular needs of the individual subject."

Presentation of data. The following results were presented:

1. Scores and ranks on the pretraining and post training administrations of the Seashore tests, the Coffman Rhythm Discrimination Test, and the Coffman Motor Rhythm Test.

2. Mean ratings by trained musicians of the musical performances of five college music majors recorded before and after training.

The "t" test was utilized to estimate the significance of differences between the pretraining means and the post training means of each group.

The results of the adjudication of the music majors showed that all subjects improved with a mean scoring of "slightly better."

The table indicates that significant improvement was made by the experimental subjects in all areas except as shown by the Coffman Rhythm Discrimination Test. The control subjects did not show significant improvement in any area.

Table

Groups	Mean scores Seashore A	 Coffman	 Motor Rhythm
Data for Seventh and Eighth Grade Students			
Experimental (pre)	19.9	33.7	23.6
Experimental (post)	25.9*	36.3*	50.9
Control (pre)	21.7	34.6	
Control (post)	22.7	33.2	
Data for College Students			
Experimental (pre)	44.7	41.3	27.7
Experimental (post)	51.6*	44.0	56.3
Control (pre)	48.6	42.7	
Control (post)	48.1	42.0	
Percentage of Students Improved			
Experimental (7 and 8)	100	89	100
Experimental (college)	100	91.7	100
Control (7 and 8)	67	16	
Control (college)	25	41.7	

* Significant at the .01 percent level.

Condensation of conclusions.

1. Rhythm discrimination tests are of value to the music educator in locating rhythm-deficient students who are in need of individual help. The value of the rhythm discrimination tests for prognosis is questionable for those individuals who are considered rhythm-deficient, but they might serve a valid function for those students making high scores.

2. It is difficult to measure an individual's bedrock capacity or physiological limit. The results secured might better be regarded as thresholds of the individual's ability as measured at any given time.

3. The experimental work done heretofore has produced varying opinions as to the results of training on rhythmic discrimination. However, it would seem that the failure to define more explicitly the meaning of the word "training" is the real reason behind these varied generalizations. To be effective a training program in rhythm discrimination and action must include a diagnosis of the shortcomings of the subject and a remedial program designed to fill the needs of that individual.

Comments. The objectives of the experiment were well worth pursuing, and the problem was well defined. The study is difficult to follow and to understand because of some unclear organization in the write-up and inconsistencies in the explanation of the experiment. Generally, a more careful experimental design would have produced more credible results. Among some possible criticisms are: lack of adequate control of variables, no randomization in the selection of groups, extremely subjective methods used in the testing and training, and difficulty of making comparisons between groups. Because of these problems, the conclusions are best applied only to the study itself. The results, however, present theses which can and should be explored in more detail with larger populations. This study opens up a fertile field for future exploration, and this in itself is proof of its worth. The study is an extremely interesting one, and the author should be commended for his originality, creativity, and contribution to an area in which scientific experimentation is minimal.

Footnotes

1. Neomi Klauer, "The Effect of Training and Rhythm on Rhythmic Discrimination in the Intermediate Grades," Unpublished master's thesis, University of Iowa, 1924.

2. Elizabeth Baugh, "Development of Rhythm Perception Through Training," Unpublished master's thesis, Ohio State University, 1928.

3. Lula Hamilton DeGraff, "The Norms of the Sensitiveness of Rhythm," Unpublished master's thesis, University of Iowa, 1924.

Cohen, Stanley Gerald. Supervision of Elementary School Music in Selected Districts of New York City.* New York University, 1963

Reviewed by Jack Pruitt

Introduction

Dr. Cohen is one of the many music educators throughout our country deeply concerned about the extent to which an adequate music education program can be conducted by the classroom teacher.

Elementary schools in New York City have not had the services of special music teachers for a number of years. Although each district in the system has a music supervisor among its supervisory personnel, it appears that the principal, too, is responsible for supervising the special areas of the curriculum, including music.

The Problem

The purpose of the investigator's study was to develop proposals for a program of music supervision that would enable elementary school principals to aid classroom teachers in the promotion of an improved instructional program in music utilizing a curriculum that is based on modern conceptions of children's growth and development.

Specific problems of the study were as follows:

1. Identifying teaching techniques and skills important to an elementary school music program that can be utilized by the teacher in the self-contained classroom.

2. Determining the extent to which selected elementary school teachers value, possess, and utilize the teaching techniques and skills identified in the preceding problem.

3. Identifying practices and activities that can be utilized by elementary school principals in their supervision of the music program.

4. Developing proposals for a program of supervision in music that will enable elementary school principals in assisting classroom teachers in the formulation and implementation of an improved instructional program in music for the self-contained classroom.

Chapter II, entitled "Related Literature," seeks information relative to general headings which the investigator has categorized as follows:

*Order number 64-277, microfilm $2.75, xerox $6.60

A. Public School Music Activities
B. General Music in the Secondary Schools
C. Elementary School Music
D. Pre-Service Music Training of the Elementary School Teacher
E. Elementary School Music Supervision

The writer reports the findings of twelve unpublished Doctoral Dissertations as well as some ten or twelve other sources dealing with the subject at hand. The principal purpose of Chapter II appears to be to show and/or prove that no other person has dealt with his specific problem, i.e., helping the principal to become an informed music supervisor. This point is made often and definitively.

Procedures Used

The first specific problem sought to identify teaching techniques, skills, and knowledges related to the effective teaching of the basic music program in its five major component areas; namely (1) singing, (2) listening, (3) movement and music, (4) playing music, and (5) creating music. A special category (Category VI--Correlation of Music with Other Subject Areas) also was included.

A comprehensive listing of music teaching competencies was compiled on the basis of (1) recommendations in the related research, (2) authoritative literature listed in the bibliography, (3) advice of the researcher's colleagues, and (4) the researcher's personal experience.

Three revisions were made of the original listing of teaching competencies. Experts recommended by the members of the investigator's sponsoring committee were asked to make suggestions for changes in the list. These suggestions were considered and adopted insofar as "they did not conflict with one another."

A second revision was made with the help of the district music supervisor, Ruth M. Shafer, and other music supervisors.

The final listing was then submitted to the investigator's sponsoring committee for suggestions and revisions. Compilation of competencies and revisions resulted in a list of thirty-six music teaching competencies.

The purpose of the second specific problem was (1) to construct a questionnaire and check list rating scale based upon the list of proficiencies resulting from specific problem one, and (2) to distribute the instrument to teachers in the selected districts. Answers to the questionnaire were made through the use of IBM cards.

The researcher used several acceptable methods for substantiating the reliability of responses.

The third specific problem ppoposed to identify practices and activities for use in the supervision of the elementary school music program by the principal. Data were "culled" from (1) the related research listed in the bibliography, (2) authoritative literature, (3) personal experience, and (4) consultation with several music supervisors, music chairmen, and principals.

The data assembled as described above were then treated as follows:

1. Supervisory practices and activities were analyzed and organized according to their applicability to each of the five component categories as previously defined plus special Category VI.

2. Supervisory practices and activities were further organized into categories as follows:

    a. Those usable for the changing of values and attitudes
    b. Those applicable for the improvement of specific skills
    c. Those that are valuable in making available desirable methods, materials, and facilities

The final specific problem sought to (1) tabulate and assemble the findings of specific problem two by the use of tables and percentages, and (2) to coordinate these findings with the data assembled in specific problem three in the form of proposals for a program of music supervision at the elementary level.

In Chapter IV the investigator analyzed, evaluated, and discussed the data placed in the tables and figures as outlined in specific problem four.

Findings of the Study

Chapter V reports the proposals made by the investigator in light of the evaluation of tables and figures found in Chapter IV. These proposals do not apply directly to the districts in which the classroom teachers participated in the survey. Proposals, in brief form, are outlined below. The principal should:

1. arrange to devote a major portion of one or more faculty conferences to the subject of this study. A music committee should be appointed to investigate its findings by means of informal group discussions with other teachers.

2. organize a music workshop wherein each teacher on his staff might participate actively based upon his or her needs and interests. The principal should participate actively, and the workshop should emphasize particularly those items which were ranked lowest in value, skill, and use. These are:

    Item
    24. create a melody from a poem
    25. use audio-visual aids such as tape recorder
    26. harmonize melodies on a chord instrument
    27. teach interpretation of music through dramatization
    28. teach interpretation of music through the dance
    29. teach reading and writing of music through creating a song or melody

3. demonstrate his interest in music to his faculty and student body by enrolling for and taking a minimum of one course devoted to the problems and practices of music education. Teachers should be encouraged to take a course stressing the playing of familiar songs on melody instruments (this competency was included in the lower half of each card ranking).

4. encourage his faculty to participate more fully in the taking of courses in the teaching of music.

5. delegate to the school's music committee the responsibility for preparing special music bulletins containing district music events as well as items of information relating to the school's music program.

6. encourage the formation within the school and throughout the district of informal study groups that will emphasize pleasurable participation in music activities. These informal study groups should be utilized as recruiters for the enrollment of talented, interested faculty members in more formal music seminars.

7. interview each of his teachers in order to determine each teacher's potential contribution to the music program. Teachers in need of help should be referred to the music supervisor.

8. publicize, or delegate the responsibility for publicizing within the school, the City of New York Board of Education bulletin "Teaching Music in the Elementary Grades." Requests for needed equipment and materials could be made upon evaluation of present equipment and materials in light of the bulletin recommendations.

9. devise a convenient procedure to be used by individual teachers to request needed services or materials available through the music supervisor.

10. designate a committee that includes the district music supervisor and grade music chairman to coordinate the talent of the community with the facilities of the school to reinforce the child's feeling that good quality music is desirable at home as well as in school.

11. delegate the scheduling of assembly programs involving music to a committee composed of music grade chairmen and the music supervisor. Nearby junior and senior high school faculties would be invited to send a representative to participate in the planning of these programs.

12. encourage his faculty to visit other teachers who have developed good programs of music. Each school's music committee, with the cooperation of the district music supervisor, should be responsible for arranging a schedule of demonstrations in the teaching of music.

13. prepare and distribute, with the aid of the music supervisor, bulletins suggesting ways and means of increasing correlation between music and other subjects, particularly in the areas of science and mathematics.

14. review material pertinent to curriculum organization, since such organization is the basic framework around which an effective program of music education should be arranged.

15. utilize the music supervisor in his district in the capacity of a consultant. The consultant should encourage the teacher to utilize his own particular teaching skills and interests in the music program.

16. in light of increased teacher interest and activity in music leading to the discovery of new talents among the student body, make provision for the formation of glee clubs, school orchestras, and bands.

17. arrange for an in-service course in class piano to be taught by the music supervisor or another qualified person.

Further proposals were as follows:

18. The principal, with the aid of the district music supervisor, should organize an expanded music section of the school's professional library. A music subcommittee would be delegated the task of evaluating books and materials.

19. The principal and music committee should devise an evaluation procedure for the school's music program.

20. Each teacher should he encouraged to organize a "music corner" where children could freely experiment with music and achieve successful experiences in this area.

21. A special music room should be arranged that will contain those items of equipment needed to enrich the music program that cannot be provided for the individual classroom.

Summary and conclusions are reported in Chapter VI. Material in this chapter appears as recommendations improving elementary music education by suggestions for teachers, children, music supervisors, teacher training institutions, and the New York City Music Department. Suggestions for further research and improvement and expansions of Dr. Cohen's study bring the study to a close.

Comments

Dr. Cohen expresses very clearly the problem with which he is concerned. Definitions of terms used, delimitations, and basic assumptions appear adequate.

The investigator justifies the study in light of his own experiences, which are indeed acceptable. However, it is not unusual to find further justification from other sources--experts in the field, among others. Finding further justification would have presented no problem. Perhaps this section would have been better entitled, "Incidence of the Problem."

Chapter II (Related Literature) contains excellent material. The many unpublished doctoral dissertations and other sources reported supply copious material directly related to the problem, and more particularly to specific-problem one (teaching techniques and skills). The reporter is to be commended for his efforts in seeking and finding material of a related nature.

Procedures used in securing data are completely acceptable and indicate a knowledge of the methods of effective research. The chapter is well organized and explains the many steps utilized very clearly. Each specific problem is explained separately, which further lends itself to logical organization.

Chapter IV reports the analysis and appraisal of findings. Dr. Cohen, in this chapter, interprets data found in Tables III through IX. One of the problems found here is that Tables III through IX are placed in Chapter III. Furthermore, in referring to these tables, no page numbers are given. Several references are made to items in the Appendix; again, no page numbers are given. In view of the confusion resulting from reading interpretations and looking for Tables, one tends to either accept without question the interpretations or disregard them.

The investigator's proposals, found in Chapter V, are numerous. "The music teaching strengths and weaknesses of the classroom teachers in the districts under consideration, as revealed by the data assembled in this study, are the relevant bases for the formulation of the following proposals." For the most part, this statement is true. However, it is difficult to find a relationship between teacher competencies and Proposal IV; i.e., that the principal enroll for a course devoted to the problems and practices of music education in the elementary school. While obviously important, this proposal does not "fit the bill" as outlined in the procedures. Otherwise, the proposals are well founded and well stated.

Chapter VI, entitled Summary and Conclusions, includes recommendations, which are not conclusions in a strict sense of the word. Recommendations made for teachers appear to be a continuation of the Proposals found in Chapter V. For example: "Recommendation is made that classroom teachers organize and actively work for and demand those materials, tools and supplies. . . ."

Recommendations are made to teachers for helping children, to music supervisors, teacher training institutions, and the New York City Music Department. While these recommendations are well-founded, they should be stated as recommendations rather than conclusions.

Several inconsistencies are found in the investigator's method of writing. In quoting long passages, Dr. Cohen at times indents the first word correctly. However, other passages begin with incorrect indentation. (See p. 22 in contrast to p. 30.) Also, the reviewer feels that a scholarly work would not allow the glaring misuse of punctuation marks as found in this dissertation. (See p. 8, among many others, for comma misuse.)

It is unusual to see the word "unpublished" capitalized in a footnote when an unpublished dissertation is being cited. However, Dr. Cohen is consistent in this case. Other inconsistencies are of a minor nature. These inconsistencies do, however, indicate a degree of carelessness which seems unnecessary.

As reported previously, the study was conducted through the use of acceptable and effective research procedures. Results, in the form of proposals, could have easily been anticipated since they are rather obvious. The investigator has, however, shown once again, that there are methods through which the principal may improve the music education program on the elementary level. Emphasis on these methods can do no harm.

Colwell, Ruth Ann. The Development of a Theoretical Basis for a Course in Music Appreciation at the College Level. University of Illinois, 1961

Reviewed by Robert W. Froelich

Critique

Introduction

Dr. Colwell deals with a problem which has been with us since the days when courses in music appreciation first earned the epithet, "the music appreciation racket"; that music appreciation courses persist as lecture courses in spite of the fact that students need to hear more music and to discuss what they hear. Music appreciation courses tend to be too technical and are approached above the level of the general student. Too much time is spent on spicy items in the lives of composers; or there is too much emphasis on music recognition; or the historical approach is overemphasized. It seems clear that there is no real basis for what is taught in music appreciation courses, and there is no universal method of teaching such courses. The writer has attempted to remedy the situation by searching for a valid basis for music appreciation courses at the college level in terms of the nature of aesthetic growth and development, and the goals of general education. The course may be defined as a general education music appreciation course which meets two hours a week plus an additional laboratory hour of listening.

Purpose

A brief prospectus which was submitted with the dissertation outlines the purpose and procedure as follows:

> The purpose of this study was to develop a sound theoretical basis upon which courses in music appreciation at the college level may be structured. Reasons for the study were found, first, in statements by authorities concerning the importance of appreciation as the central aim of all music education; second, in widespread criticism of current music appreciation courses as regards content, teaching methods, teacher qualifications, evaluation, and results; and third, in statements by authorities concerning the need for research into the application of aesthetic theories to the various phases of music teaching and musical learning.

Procedure

> The procedure of the study was to ascertain valid principles applicable to music appreciation, to derive from those principles objectives and aims for a music appreciation course, and to use the objectives to determine appropriate experiences, organization, and evaluative tools for measuring the results of the experiences in

> the light of the postulated objectives. Valid principles were found through research into two areas: first, the nature of music as an aesthetic object symbolizing the inner life of feeling and emotion, and the corresponding recognition of music appreciation as an aesthetic experience; second, the nature of the general education program in the college, of its aims and goals, and of music appreciation as an accepted part of the general education program contributing to the aims and goals of general education. Objectives for a music appreciation course were formulated from principles pertaining to the two areas of aesthetics and general education. These objectives were couched in behavioral terms for the purpose of measurement and evaluation, and fell into four categories: objectives pertaining to attitudes and appreciations, objectives pertaining to knowledge and understandings, objectives pertaining to skills, and objectives pertaining to habits. Experiences were selected which would conform to widely accepted learning theories and which would lead directly to the specific objectives. The organization typical of music appreciation courses was explored, and that organization determined which would be most effective in reaching the stated objectives. A discussion of the uses of evaluation and a reviewing of existing music appreciation tests was followed by suggestions for evaluative tools and processes which would measure achievement in the light of the postulated objectives.
>
> The conclusion of the study was that a valid basis had been formulated upon which courses in music appreciation could be taught conforming to the nature of the aesthetic experience and the principles of general education at the college level.

One of the outstanding differences between the course described here and the usual appreciation course is the empbasis on the nature of the aesthetic experience with music. On the basis of statements of a number of authorities it was determined that the materials of an aesthetic object are perceptually select and vivid; that the form is particularly expressive of inner life experiences and that the function is to symbolize subjective experiences which cannot be verbalized. The value of an aesthetic object is intrinsic, and therefore the aesthetic experience is "object-centered, producing rich emotional reactions and understandings."

The next step was the description of music as a possible aesthetic object:

> The materials of music are uniquely suited for the symbolizing of a feelingful inner life. Tone, the substance of music, bears a strong resemblance to feeling--it is produced by movement and exists in time. Its abstract quality enables it to function readily as a symbol, since it does not represent specifics which detract from the object-centrality so necessary to the aesthetic experience.

> Further, the aesthetic experience with music is such that the musical and formal elements will be the basis of communication and the experience will be similar in form to the form of the musical work heard. Whether the listener experiences that which the composer intended depends upon his expectations and his understanding of the musical 'norms' which the composer has set up and the ways in which the composer creates tension by departing from his norms. Hence, a valid experience with music usually demands knowledge of how to listen and what to listen for....

Space does not permit a thorough discussion of the logical development of the lists of principles, objectives and experiences although this background is valuable in showing how these ideas evolved. The lists themselves are the most valuable end product of this study and therefore are reproduced here:

Principles for Music Appreciation

1. Present the general aesthetic principles of music and relate those principles to the larger aesthetic principles which all the arts hold in common.
2. Present those principles always within the content of music itself, never as isolated intellectualization.
3. Present those principles in simple, understandable concepts which the student can grasp outright, and give him opportunities to experience those principles in ever-increasing complexity and depth.
4. Present the generalizations and principles after the experience has been encountered. Generalize from vivid and varied experiences.
5. Place the burden of exploration, criticism and conclusion upon the student rather than supplying him with the generalization.
6. Strive for depth of understanding of a limited area, if necessary, rather than attempting to cover the entire field or a large percentage of it.
7. Present possibilities for individual choice, growth, and enterprise in areas of independent research, study or performance, so that there will be opportunities to develop personal bents and abilities.
8. Present historical, social, and personal material when it is needed to complete the student's understanding of what he is hearing.
9. Give opportunities for participation in music in ways which can be genuinely aesthetic; class singing will be the most promising method for this.
10. Confront the student with a quantity and quality of content and assignment that will challenge him to do high level, college quality work. Insist on use of technical terms when these are necessary for adequate understanding.

11. Place thorough understanding of the musical aesthetic nature of the art first, technical language as a means to understanding second, and enjoyment third. Assume that enjoyment will come with genuine understanding.

Objectives for Music Appreciation

Attitudes and appreciations:

1. The student listens with a "preparatory belief" in the aesthetic message of the music.
2. The student has emotional responses directly relevant to, and resulting from, music heard.
3. The student is open and receptive to all kinds of musical experiences.
4. The student discriminates between qualities of music and of performances.
5. The student attempts to understand the judgments of the connoisseur.
6. The student values the musical attempts of others and of his own.
7. The student wishes to share aesthetic experiences.

Knowledges and understandings:

1. The student is aware of and responsive to form in music.
2. The student is aware of and responsive to the materials of music and their aesthetic effect.
3. The student has a technical vocabulary with which to express specifics about music.
4. The student has a knowledge of styles and the aesthetic expectations of the various styles.
5. The student has some knowledge of the historical background of styles and the chronology of composers.
6. The student has developed a set of generalizations applicable to all music.
7. The student has a basis upon which to enlarge and increase his understanding of music and his pleasure in music.
8. The student has developed a set of generalizations applicable to all the arts.

Skills:

1. The student has developed a musical memory sufficient for the appreciation of form.
2. The student is familiar with the musical score.
3. The student can participate with pleasure in some type of musical activity.
4. The student knows where to find information which would help him listen more effectively.

Habits:

1. The student devotes some time to musical experiences.
2. The student participates in some form of musical recreation.
3. The student supports community and civic musical activities.
4. The student endeavors to widen his own comprehension and musical equipment.

Experiences in Music Appreciation

Experiences relevant to the development of positive attitudes and appreciations:

1. Participation in gradually more complex discussion of the aesthetic message of music, as found in specific compositions heard.
2. Participation in analyzation of factors contributing to the aesthetic content and message.
3. Experience in listening to music representative of wide range of styles, cultures, eras, performance groups, and qualities.
4. Participation in discussing and analyzing the above representative works to determine how each differs aesthetically, technically, stylistically, and qualitatively from other works heard, and other versions of the same work.
5. Participation in discussions of individual reaction to music as compared to authoritative critical judgments.

Experiences relevant to development of knowledge and understandings:

1. Experience in listening to analysis of formal structure of music heard.
2. Experience analyzing music heard for formal content.
3. Experience with formal structure as it alters in the various eras; opportunities to develop a set of expectations for the various styles.
4. Experiences in applying the technical vocabulary of music to analysis of works heard, such analysis including at various times melodic, harmonic, rhythmic, structural and aesthetic aspects of the music.
5. Opportunities to specify instruments and voices heard.
6. Opportunities to read and explore, as well as to discuss, the historical background of music heard.
7. Experiences in relating the historical, stylistic, formal and aesthetic aspects of one era with another.
8. Experiences in making and applying generalizations about music.
9. Encounters with new music in situations where critical judgment, analysis of musical and aesthetic content, and historical relationships must be applied.

10. Some opportunity to examine art works of other types for related principles and characteristics.

Experiences relevant to the development of musical skills.

1. Opportunities, in all the above phases, to be independent (under some guidance) and rely upon his own listening and hearing, and so develop skill in listening and understanding.
2. Opportunities to hear works gradually increasing in length and formal difficulty in order to develop his musical memory and comprehension of formal structure.
3. Experiences in following the score, at first with simple scores and later with more complex and intricate scores.
4. Experiences in participation in musical activities.
5. Opportunity to do independent research in the technical or historical phases of music.

Experiences relevant to the development of habits.

1. Experiences in recalling musical listening which has occurred outside of class time.
2. Opportunities to report on attendance at community and other musical activities.
3. Opportunities to participate in some "recreational" music in class; encouragement for similar out-of-class activities.

In discussing the sequence and organization of course content an "obvious-to-subtle" organization, was recommended as a more appropriate approach than a chronological or a simple-to-complex approach. In other words the course might begin with shorter works obvious in aesthetic appeal, formal structure, or obvious in the use of specific musical elements.

Under the topic of evaluation a survey of existing music appreciation tests was made. The Hevner Test for Musical Concepts (1956) was found to be most appropriate to the suggested objectives for the course. It was also suggested that any classroom tests should include listening to complete works and should use questions which would test aesthetic, emotional, musical, technical and historical aspects of the works being heard. The study also includes a resume of research in the area of music appreciation and a valuable review of current literature on this topic.

Suggestions for Further Research

Since this approach is theoretical the writer suggests that it might be tested in an actual classroom situation. It might also be compared with another approach to see which produced the better result. Any research will require the development of an adequate evaluative tool in music appreciation. There is no tool now available which will measure aesthetic awareness and musical knowledge in terms of music being heard.

Comments

The writer has stressed the fact that the teaching must be of a high quality. It has occurred to this reviewer that there are not many teachers of his acquaintance who are well-qualified to "present the general aesthetic principles of music and relate those principles to the larger aesthetic principles which all the arts hold in common." Nor are there textbooks which give more than lip-service to these principles. Musicians and teachers need to improve their skills of presentation and to increase their information in this area.

The intent of the study was not to set up an appreciation course in detail, but the inclusion of a suggested course syllabus and an accompanying evaluative tool might have given more meaning to the study and furnished concrete examples for some of the discussion.

There was a point of style which seemed irritating in an otherwise well-written study, and this is perhaps one of the hazards of dissertation writing. Repeated listings of principles given to show a logical connection with established objectives could have been omitted.

This reviewer rebels at the suggestion that "in the interests of efficiency, tests should require a minimum of writing..." or that "a classroom test should be at least predominantly objective..." If the goals of general education are to be served, then the college student as an educated person should be able to express some general ideas (at least one short paragraph per test) about musical styles or elements of music to which he listens.

This study goes a long way toward establishing a firm basis for the development of a course in music appreciation. Points of discussion are well-documented, and the steps in the development of the course proceed from one to the other in a logical manner. It is certainly not the final word, but it does present a starting point for further research and discussion. Undoubtedly one of the most difficult problems in this area is the presentation and evaluation of aesthetic, emotional and musical aspects. A considerable amount of information was reviewed and this alone should make it a valuable work to college teachers of music appreciation courses. The points of view expressed in terms of aesthetics, principles of teaching, organization and evaluation would be helpful to anyone having to deal with this area of study.

Cowles, Clifton Volney. Aesthetic Judgment of High School Music Students.*
University of Southern California, 1960

Reviewed by Lewis B. Hilton

Purpose

The author states that "....research in the areas of music appreciation and of music value judgment....has given little attention to consideration of any ability to make aesthetic judgments in music in various performance media."

The purpose of this study was to shed light on "the ability of high school music students to assess the quality of a musical performance." To accomplish this task, Mr. Cowles constructed a Test of Aesthetic Judgment.

Questions to be Answered

1. Is there a relationship between differences in aesthetic judgment of high school music students and their performance media?

2. Is aesthetic judgment improved as experience in musical organizations is increased?

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3. Are there differences in ability to assess performance quality when group comparisons are made among members of the choir, members of the orchestra, and members of the band?

4. Do students who perform in the brass, percussion, string and woodwind sections of the instrumental groups show significant differences in aesthetic judgment?

5. Is there a relationship between performance media and ability to assess quality of music in the instrumental, piano and vocal music sections of the Test of Aesthetic Judgment?

6. Do significant differences exist among students grouped on the basis of socioeconomic status?

7. When socioeconomic status is held a constant, do differences among those students participating in the three major performance groups exist?

8. Does the pattern of socioeconomic differences change consistently as experience in musical organizations increases?

Assumptions Made

1. Socioeconomic status can be determined adequately for its use as a working tool.

2. It would not serve a useful purpose to define socioeconomic status beyond the upper, middle and lower levels for the purpose of this study.

3. High school students can be relied upon to answer questions and test items honestly and to the best of their knowledge.

4. The performance of chamber music from both instrumental and choral literature will serve all students equally well as a basis for their evaluation of performance proficiency."

5. The variety of experiences of students both in playing instruments and in singing during their early school years may be disregarded as of no major importance to this study.

Definitions

The author defines aesthetic judgment as "the ability....to determine the quality in musical performance which makes it more or less pleasing."

Socioeconomic status of the high school students (grades 10 to 12) who were subjects, was arrived at by the use of Edwards Scale of Occupational Status applied to the students' fathers which resulted in the subjects being grouped into upper, middle and lower class.

Limitations and Delimitations of the Study

1. The study was delimited to students in high school music participating in orchestra, band, or choir.

2. Students were chosen for study only from organizations considered to be of high quality in terms of performance practice, material performed, and balance of instrumentation.

3. Socioeconomic status was determined by the occupational rating of the Edwards Scale of Occupational Status. The occupation of the father was used to determine status of the household except in instances where the mother was the sole means of support. The inherent limitations of this device were recognized.

4. Ethnic groups were not studied separately but rather included in whatever class the occupation of the supporting parent would indicate.

Review of Related Research

A succinct review of testing in the visual arts and in music is presented and is one of the most valuable parts of the study. A less careful approach is taken to the consideration of the meaning of aesthetics and aesthetic. Some review of studies of social class and intelligence ratings is undertaken.

The instrument: The Cowles Test of Aesthetic Judgment. The test is divided into three parts: (1) instrumental music, ten items; (2) piano music, 12 items; (3) choral music, ten items.

The music used varied from Gershwin's "Fascinatin' Rhythm" to Mendelssohn's "Elijah." In the instrumental and vocal music sections, a "good" performance was paired with an "inferior" performance of the same piece or section of a piece; e.g. Brahm's Trio, op.40: "....in one performance, the violin omitted the double-stopped figures and played only the upper notes"...."Mendelssohn's violin concerto was performed by a professional violinist and by a superb trumpet virtuoso. The exacting technique displayed by the trumpeter did not compensate for the use of harmonics in the violin version," etc. The piano selections were also paired performances, the harmony sometimes altered in one performance or other changes made to emasculate or otherwise lessen the musical effectiveness of the "inferior" performance. In item 11, "....the repetitious first two measures of "I Believe" were extended another half measure thus carrying the repeated one note to a point of nausea. This was compared to the original edition."

Three items of the piano section of the test were taken from the Kyme Test of Aesthetic Judgment (unpublished doctoral dissertation, 1953). Each of the three sections contained one pair of identical performances.

Instructions, both taped and printed, were furnished as follows: "This is a test of aesthetic judgment; it is a test to discover your taste in music. You will hear two short pieces very much alike, and while you are listening you are to decide which of the two you like the better. Sometimes the two pieces are exactly alike except for the rhythm, sometimes it is the harmony that is different, sometimes it is the melody, and sometimes it is the way the music is played or sung that is different. Listen carefully to the first performance in each item so you can decide whether the second performance is (S) superior to the first, (I) inferior to the first, or (E) equal to the first in musical value. If you believe the second performance to be superior, circle the S...." etc.

The Pilot Study

Results of a pilot study necessitated several changes in the choices of music originally recorded. The reliability of the final version was established at .811 based on the Pearson r=.682 for each half of the test and the Spearman-Brown correction formula.

Administration of the Test

The various versions of the Cowles Test of Aesthetic Judgment were administered to approximately 1,250 students from 16 music classes in four high schools and one junior high school, but the scores of only 400 students were analyzed.... "from two senior high schools in southern California where all three major musical organizations were considered to be of outstanding quality."

Summary of Data Obtained

Hypothesis number 1: There is a relationship between performance media and the ability of music students to assess ensemble quality. Analysis of variance tended to support this hypothesis.

Hypothesis number 2: The aesthetic judgment of high school music students remains relatively constant during senior high school years. This hypothesis was supported by the data.

Hypothesis number 3: There is a relationship between the aesthetic judgment of high school music students and years of experience in performance groups. Analysis of variance supported this third hypothesis.

Hypothesis number 4: Students playing in the major divisions of instruments (brass, percussion, strings, woodwinds) will respond equally well on the Test of Aesthetic Judgment.

Critical ratios applied to differences among the groups mentioned tend to reject this hypothesis.

The aesthetic judgment of members of the string section....was significantly higher than students of the woodwind and brass sections. The string students also scored significantly higher than members of the choir and insignificantly higher than the percussion students. Differences among students in the woodwind, brass, percussion sections and members of the choir were not statistically different to a significant degree.

Hypothesis number 5: Socioeconomic classifications will have no influence on the scores of the high school music students on the Test of Aesthetic Judgment when considering: (a) all students without regard to performance media, (b) membership in musical organizations, and (c) years of experience in musical performance groups.

1. Data....tend to reject parts (a) and (b) of this fifth hypothesis.

2. Students in the upper socioeconomic level showed significantly higher aesthetic judgment than students in either the middle or lower classes.

3. Students in the orchestra, when classified by socioeconomic level, produced variances between the upper and the two lower groups.

4. Among members of the band there were no significant differences when students were classified on this basis.

5. Members of the orchestra, when classified by the occupation of their parent, showed significant variances at all three levels.

Recommendations for Further Research

1. The present study should be expanded to include: (1) a longitudinal analysis of growth in aesthetic judgment of music students from grade 9 through high school, (2) a sample of students with no formal musical training, and (3) the relationship of aesthetic judgment in terms of sensitivity of performing skills, sic.

2. Research into the learning process involved in the development of the many aspects of aesthetic judgment is needed.

3. Research is needed to identify the specific musical experiences which may contribute to the development of aesthetic judgment: (1) training supplemental to the major performance groups, (2) understanding of the composer's style, and (3) availability of music of a professional calibre for listening both within and supplemental to school activities.

Critique

Mr. Cowles seems to be aware of the principal reservation which the reader may feel about his dissertation i.e., the definition of aesthetic judgment as "the ability....to determine the quality in musical performance which makes it more or less pleasing" since in his recommendations for further research he takes into account the "many aspects of aesthetic judgment...." The definition of aesthetic and aesthetic judgment, emphasizing pleasure, seems to place Mr. Cowles in one of four or five schools of thought concerning aesthetics, most probably the one which has as its chief spokesman the late George Santyana. Mr. Cowles makes no reference to this, but explains that he associates himself with the followers of Prall, Dewey, and Mursell and rejects the "atomistic associationist psychology of such persons as Fechner and Seashore." He quotes James Mainwaring, ("An Examination of the Value of the Empirical Approach to Aesthetics," British Journal of Psychology, XXXII, October 1941) in defining the aesthetic experience upon which judgments are based: "....that experience which tends to evoke an aesthetic judgment; that is, a proposition that something is or is not beautiful.... One of the most valuable assumptions accepted as a basis for experimentation is that the developed judgment of taste is a cultured derivative from innate aesthetic tendencies."

While Dewey was most certainly an aesthetician who can be said to have developed and to have become a spokesman for a school of aesthetics, the other scholars mentioned cannot be classified as aestheticians, even in the minor leagues. The reader looks in vain for evidence that the author has an understanding of the diverse schools of aesthetic thought. The bibliography, which seems honestly and refreshingly unpadded, suggests that relatively little basic reading, let alone research, in the area of aesthetics was undertaken. There is no presentation or discussion of basic western points of view regarding aesthetics. Instead there is what appears to be a somewhat naive acceptance of the notion that "right or wrong" answers to a test built around "good and bad" versions of a musical composition would suffice. Perhaps if the dissertation title had been "judgments of high school music students concerning relative skills of musical performers and authenticity of musical arrangements," or some such, the reader would not feel called upon to complain about the lack of aesthetic orientation.

As it is, Mr. Cowles aesthetic position remains quite fuzzy to this reviewer. But practical he is, and there is much of value to be found for the musician-educator concerned with taste and value judgments, although Mr. Cowle's manipulations of the musical materials of the "inferior" members of the paired test items seem at times to be overly obvious, particularly when some of the music used might well have been familiar to the subjects. He does not attempt to establish, by the use of a panel of experts or otherwise, the "inferiority" of the manipulated item, but makes the assumption that changing the original version makes it inferior. The "inferior" performances are somewhat less suspect in this respect. There is a great variety, by almost anyone's standards, in musical value among the examples chosen. A Farnsworth type of scale (judgments by experts) might rate the composition "I Believe" as being so banal as to be beyond cheapening or making it more "nauseating." since the author is of an empirical and pragmatic turn of mind, he may well have taken this into account. But he should have said so. His statistical treatment of the data obtained is very sophisticated. One can only wish that the philosophical orientation had been equally so.

There are the usual sprinklings of typing errors, a few are serious enough to impair the meaning of the sentence, or at least to diminish somewhat the reader's credulity: e.g., "A la bein Armee" by Schutt, "Suite No. 5 for recorders" by Scheim, hypotheses for hypothesis, and so on.

Cribb, George Robert. The Comparative Effectiveness of Conventional and Programmed Instructional Procedures in Teaching Fundamentals of Music.* North Texas State University, 1965

Reviewed by Gary M. Martin

The Purpose of the Study

> "To investigate the comparative effectiveness of three out-of-class procedures designed to augment a conventional classroom instructional method in a course in the fundamentals of music for elementary education students."

The three out-of-class procedures examined by the author were the following:

1. Conventional out-of-class study assignments.
2. Out-of-class individual use of a programmed textbook.
3. Out-of-class individual use of a teaching machine program.

Student achievement in music fundamentals was tested and compared for the three methods, and correlations were sought between each of the three methods and (1) music ability, (2) general academic ability, (3) student classification, (4) previous musical training, and (5) previous experience with programmed learning.

For the purposes of the study it was assumed that teachers in class had similar effects on the control and experimental groups; that the programmed textbook and teaching machines were valid instruments, and that the control and experimental groups did not differ significantly on variables that would influence their achievement in fundamentals of music. (Students used in the study were elementary education majors at North Texas State University, Denton, Texas, 1963-64.)

Results of the Study

1. No significant differences were identified in comparisons of the out-of-class approaches. In fact, the significance was usually far below the desirable .05 level.
2. Although some significant correlations were reported in the study, no significant correlations were found to exist between the three out-of-class procedures and musical ability or academic ability.
3. Significant differences were found to exist in favor of groups with no previous musical training, as compared to students with musical training. The indication that students with no musical training apparently achieved more in each of the out-of-class procedures than students with musical training could have important implications for educators.

Comments

The study was an ambitious attempt to provide needed information about a pertinent topic in music education. The lack of statistical significance with most variables may be partly attributed to a generally loose research design, which in turn was partly caused by the size and complexity of the study. Such important factors as in-class learning activities were not controlled in the study, and it is difficult to justify the assumption that each participating teacher was equally influential with his students.

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The data have provided some interesting information about persons without previous musical experience indicating they may have performed better than students with previous musical experience in several instances. It could be possible that linear programming of the kind used in the study is not appropriate for persons already possessing some competencies in music because of the necessity of going through so many minute steps in the program. Such a conclusion (if properly substantiated) would have widespread importance for music educators, particularly if they are using linear programs of the kind used in the study. It is wrong to assume that all programming efforts are equal in any way. A surprising variety of programming formats are in existence with a concomitant wide range of success or failure. This study was concerned with only two programming formats of a related nature, a linear textbook and a linear program in a mechanical device.

Deihl, Ned Charles. Certain Relationships Among Concept Developement, Development, Listening Achievement, Musicality and the Quantification of Musical Performance Experience.* The Pennsylvania State University, 1963

Reviewed by Thomas W. Miller

The purpose of Deihl's study was to identify and analyze certain relationships among concept development, listening achievement, musicality and the quantification of formal musical performance experience.

The Problem

Deihl's study sought to determine if concept development varied significantly with listening achievement, musicality, and the amount of musical performance experience. Six questions were posed:

1. Does concept development vary significantly with the quantification of musical performance experience?

2. Does concept development vary significantly with listening achievement?

3. Does concept development vary significantly with the degree of musicality?

4. Does quantification of musical performance experience vary significantly with listening achievement?

5. Does quantification of musical performance experience vary significantly with the degree of musicality?

6. Does listening achievement vary significantly with the degree of musicality?

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Methodology

The author defined concept development as the ability to abstract the essential generic aspects of musical structure, as well as the ability to apprehend aurally and to discriminate among varying qualities of musical performance. To measure concept development, Deihl devised a measure of concept development in two subtests, verbal and aural. The verbal subtest was in the form of 25 multiple-choice items which attempted to measure an understanding of the interrelationships of three levels of musical form: acoustical components, musical elements, and the integration of the elements into musical composition. The aural subtest, which sought to measure discrimination among three recorded examples, consisted of 22 recorded items, each selected for a specific musical characteristic. The aural subtest was validated by five music faculty members acting as a panel of judges; items on which at least four of the five did not agree were deleted. Each of the 22 items called for recognition of a specific musical factor (i.e., intonation, balance, phrasing, etc.).

For the measurement of listening achievement Deihl selected an unpublished test of achievement in music appreciation by Routch, The Achievement Test in Music Appreciation. The test was designed by Routch in partial fulfillment for the doctor's degree at the Pennsylvania State University. It reported a reliability coefficient of .63 on the listening subtest which Deihl used.

The author selected the Gaston Test of Musicality for the third phase of the study. Gaston validated his test on the basis of an external criterion. A reliability coefficient of .90 is reported for grades 10-12.

Deihl developed a musical performance inventory with weighted scores for varied types of musical experiences in an attempt to account for relative importance of various musical experiences. The following items were allotted points under Deihl's Musical Performance Inventory:

Performance group:
    One meeting per week - - - - - - - - - - - - - ½ point per year
    Two or three meetings per week - - - - - - - 1 point per week
    Four or five meetings per week - - - - - - - 2 points per year

Private study:
    Half hour weekly lesson - - - - - - - - - - - 1 point per year
    Hour weekly lesson - - - - - - - - - - - - - - 1½ points per year

Music appreciation course - - - - - - - - - - - - 2 points per year

High school general music or theory course - - - 2 points per year

Church choir (limited to one point)- - - - - - - ½ point per year

Community groups, ensembles, dance band - - - - ½ point per year
(limited to one point)

The complete test battery was administered to 184 college subjects at the Pennsylvania State University. This sample population was drawn from five sections of a course in the fundamentals of music appreciation and, consequently, consisted predominantly of freshman and sophomore students.

Findings

The data was subjected to the following statistical procedures:

1. Means for each measure in the battery.
2. Standard deviations for each measure in the battery.
3. Tests for significance of difference between groups to determine singleness of population.
4. Intercorrelation matrices of all possible pairs of variables.
5. Multiple regression with parsimony using intercorrelation data.
6. Partial correlation coefficients.
7. Multiple correlation coefficients.
8. Complete item analysis of the measures of concept development and listening achievement.
9. Distribution of sample into subgroups according to Musical Performance Inventory.
10. Statistical tests for significant differences of percentages of correct responses between experience groups.
11. Examination of musical performance experience indicated by students scoring highest on the measures of concept development and listening achievement.

Deihl's findings indicated that, in response to question number 1, no significant relationship was found to exist between concept development, as determined by his measures of concept development, and musical performance experience, as quantified by his Musical Performance Inventory. He did note, however, a "somewhat ascending trend in scores according to experience." Further, the seven top students had all studied privately. We do not have any indication of how many subjects who had studied privately scored in the lower brackets. Deihl also noted that 31 subjects who had general music experience in high school did not demonstrate a higher score than the remainder of the sample who had not had such experience.

In response to question two, Deihl found a low but significant positive relationship between concept development and listening achievement. The partial coefficient of .244 evidenced this. The reader is tempted here to relate the aural subtest of concept development to the test for listening achievement required in the Achievement Test in Music Appreciation. Despite the fact that the author pointed out that the two tests were apparently measuring different factors, each relied upon a developed skill and, therefore, were related in the techniques required.

A low but significant positive relationship between concept development and musicality was evidenced by the partial coefficient of .261 in response to question number 3. Again the reader is tempted to associate the skills required for both tests, since each depends heavily on aural skills.

The study showed a low but significant positive relationship between performance experience and listening achievement as stated in question number 4. It appears, however, that the greatest difference between low and high groups existed only in relation to timbre. Strangely, little distinction was evident in the styles category. No difference existed in the area of vocal forms. Again, the determining factor was related to some form of aural recognition.

In answer to question number 5, the study showed a low but significant positive relationship between performance experience and musicality as expressed by the partial correlation coefficient of .286. The author pointed out the similarity between this correlation and the correlation of performance experience with listening achievement. He also indicated that this correlation was considerably higher than that shown between performance experience and concept development. The reader is tempted to reflect on the reasons for this apparent difference: whether in essence performance experience affected scores on the Gaston test, or whether only the most musically talented continued in the performance programs.

In answer to question number 6, the study established a somewhat lower positive relationship between listening achievement and musicality. The correlation was expressed by the coefficient .160.

Critique

Deihl's conclusions are largely assumptions derived by implication and are indicative of the inconclusiveness of the entire study. A number of points support this statement:

First, there is the problem of the homogeneity of the sample to which Deihl himself calls attention. A rather limited sample such as this one can hardly suggest any great degree of conclusiveness.

Second, there is the use of the Gaston test at this level with college freshman and sophomores. The test manual gives reliability coefficients for grades 10 through 12. It is nowhere suggested that the standardizing procedure went beyond this level. The published norms are based upon grades 4 through 12, indicating that the test was not considered for use beyond this level. It should not be assumed, therefore, that the test is valid or reliable when used with college students.

Third, there is a question regarding the influence of learning on Gaston's test. No studies have been reported which have attempted to assess this influence. Deihl's results suggest that there might be an influence of additional factors on the test results, particularly with this population sample.

Fourth, the problem of the Routch test appears to be similar to that which Deihl faced as a result of a rather homogeneous and limited sample population. Since the Routch test is not published, however, there are no norms available by which to evaluate the test. It would be interesting to know how large a population was used to establish Routch's reliability coefficient of .63 as reported in Deihl's study. It would have strengthened Deihl's study if he had reported more about this unpublished measure in defense of his selection.

Finally, there is some question regarding the validity of Deihl's Measure of Concept Development. Upon an examination of the verbal subtest in the appendix of the study, a question about face validity arose. This reviewer questions whether this test really measures musical concepts as defined in the study. It should also be pointed out that the sample population which was used in the construction and validation of this test was extremely limited, as well as homogeneous. While no recording of the aural subtest was available for examination, there is a question here also about the validity of such a test to measure musical concepts. There is more reason to believe that it measures fundamental music listening techniques.

Certainly, Deihl used sophisticated statistical procedures in the interpretation of his data. Unfortunately, however, the results obtained are severely hampered by inherent weaknesses in the measures used to obtain the data.

Evenson, Pattee Edward. A History of Brass Instruments, Their Usage, Music, and Performance Practices in Ensembles During the Baroque Era.* University of Southern California, 1960.

Reviewed by Edgar J. Lewis

Even the title of this dessertation is intriguing and full of promise for the scholar interested in untangling some of the confusion and misunderstanding which has been perpetrated through misleading or incomplete accounts of the history of the wind instruments in general and the brass instruments in particular. It is therefore inevitable that the success of this work should be considered in terms of how completely the promise implicit in the title is fulfilled. However, in fairness to the author, it should be noted at the outset that the void which he has quite properly seen the need of filling is simply too large to be eliminated by a single work of scholarship, no matter how excellent that work may be.

The preface to this thesis gives an excellent indication of its content and the manner of its organization. The author initially justifies his own pursuit of the problem by referring to the numerous scattered references to brass instrument usage which are found in various standard sources, noting that these relatively incomplete references leave many questions unanswered. He then poses a number of specific questions to which the body of the thesis is to be addressed. Quotation of some of them here will serve to give the reader a good idea of the scope and main areas of emphasis of this thesis:

> "...questions as to the sound and technical characteristics of brass instruments...."

> "....what role did they play and how were they used?"

The author then raises questions related to the social status of brass players, as quoted in the following.

> "Did a career as a professional musician exist? If so, what environmental circumstances were available for its practice, and what training and preparation were required for admission to the profession? What were the rewards for entering the career as a performing musician in terms of compensation and security?

And finally, there is the following:

> "Last and most important, were questions concerning details of performance practices and the music played on brass instruments in ensemble. Was the repertory an important segment of the musical literature of the period?"

As an outgrowth of the questions relating to performance practice and importance of the repertory, Evenson also proposes to deal with questions of "musical forms," stylistic evolution," and "instrumentation." He also includes in his preface a promise, later quite satisfactorily

*University of Southern California, 1960, order number 61-6282, microfilm $6.60 xerox $23,40 fulfilled, to explain the diatonic and chromatic parts played on trumpets before the availability of valves. In the same paragraph he suggests questions pertaining to the relationship between instrumental music and dance music as well as "important problems related to interpretation." Unfortunately, the implied promise pertaining to matters of interpretation does not seem to be completely fulfilled; but this may perhaps be forgiven on the assumption of the author's awareness that extended discussion of the interpretation of Baroque music can easily lead into dangerous pitfalls.

In the final portion of the preface, the author alludes to the practicability and availability of extant Renaissance and Baroque music for brasses for present-day use as part of the reason for his study. Of particular relevance for those interested in music education is his expression of the hope that the material of the study may, "because of the inherent value of the music for teaching purposes, serve music education by enlightening teaching personnel concerning its existence and suitability." It is also relevant to this review to note that the final portion of the preface contains the author's statement that the organization of the study is centered around three main topics: "(1) types of brass instruments which were employed in ensembles during the Baroque period, (2) the musical and sociological backgrounds of their usage, and (3) the performance practices and the music with which they were associated."

It is the table of contents, however, which reveals the actual organization of the text of the thesis. Three main parts of the study are designated. Part one, consisting of chapter I only, concerns itself with background material, giving a summary of city, court, and church usage of brass instruments during the Middle Ages and the Renaissance, as well as a discussion of the nature of the brass instruments used in pre-Baroque times. Part two, consisting of chapters II and III, concerns itself with the Baroque period, using chapter I as a starting point for the continuation (in chapter II) of the discussion of the instruments and their usage in the Baroque era. Most of the discussion of usage is found in chapter III, and this is possibly the strongest chapter in the entire thesis. Part three deals in general with Baroque performance practices, musical analyses, and discussions of selected musical examples. The best idea of the detailed content of part three may be conveyed by listing the actual chapter headings as follows:

Chapter IV	Brass Instruments in Ensemble with Voices, Trends in Their Usage, the Emergence of Idiomatic Instrumental Writing, Composers, Musical Styles, and Illustrative Examples
Chapter V	Brass Instruments in Homogeneous and Heterogeneous Instrumental Ensembles
Chapter VI	Musical Forms in the Repertory of Heterogeneous Brass Ensembles
Chapter VIII	The Transcription of Baroque Ensemble Music for Modern Brass Instruments

The foregoing summary of the author's aims and intentions as given in his own preface to the study, along with the brief outline of the content and general organization of it, has seemed the best way, in this case, of more or less exactly describing what one might expect to find in a thesis which suggests such breadth in its very title. On reading the entire thesis, one discovers that the title is indeed appropriate, and that the many aspects of the problem which are introduced in the preface and enumerated in the table of contents are indeed dealt with, sometimes in very thorough fashion. It is the word sometimes which is crucial here, because the critical reader of this thesis may share the reviewer's opinion that all areas of the study are not treated in equal depth and that the study might have been improved by limiting the number of problems touched upon. For instance, those portions of the thesis which deal with the usage of brass instruments are especially good, and the outstanding quality of chapter III in this regard has already been noted. Even though the author has had to gather his material from numerous and sometimes secondary sources, he has selected well, organized his material logically, and written it in lucid style. For anyone who seeks information on where and how the brass instruments were used in Baroque society, or on matters pertaining to the selection, training, professional organization, and social status of brass players, this thesis should prove to be a dependable and interesting source. On the other hand, however, the material offered on the instruments themselves sometimes seems to stop short of clearly answering some of the important questions, and the portions of the thesis dealing with actual musical examples seem quite limited in view of the broad scope of the problem. Even granting that the thesis would have been inordinately lengthened by more complete treatment of these matters, one still is forced to regret that they are introduced and then left without more complete realization of their possibilities.

By way of more specific comment, it might be argued that the first chapter (dealing with Medieval and Renaissance background) is really superfluous and might well have been omitted to make room for more intensive treatment of the Baroque instruments and their music. So much of this first chapter is based upon interpretation of secondary sources and pictorial evidence and so little musical evidence or other documentation is offered in support of the conclusions drawn that the chapter poses as many questions as it answers. For example, there is the problem of the cornet, which always poses a question of classification because it is generally understood to have been made of wood with fingerholes bored in it in the manner of the woodwind instruments, but equipped with a cup mouthpiece. The author's right to include it with the brass instruments for the purposes of this study is not questioned here, but it does appear strange that he not only fails to provide a thorough description of this important though obsolete instrument, but even confuses the issue by including, in his first chapter, the following misleading statement: "Strictly speaking, the cornet was not always made of brass." Even though the author does clarify the matter somewhat in his second chapter, it is disconcerting to find such a statement in the initial discussion of an instrument that is so little known and understood.

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There are a number of other statements and/or conclusions scattered throughout the thesis which lack strength and validity due to lack of documentation. In chapter II, in his discussion of the trumpet family, the author writes:

> "With their (the trumpets) increased use in the performance of art music there were, however, modifications in bore and tube length and the addition of crooks of varied lengths which enabled the instruments to be used in a wider range of keys."

Unfortunately, no documentation nor further explanation supports this statement, so the reader is left uninformed as to the specific nature of the modifications, the extent of the wider range of keys to which the author alludes, and the point in time during this very extended period in music history at which the changes are said to have taken place.

In the same chapter, in discussing the horn, the author makes the following statement: "Now, for the first time, composers paid it serious attention." Again no dates are offered, so the now can only be taken to mean sometime within a period spanning 170 years or so. We are given no specific examples of music or composers in direct support of the statement although later discussion of the matter seems to convey that the conclusions regarding horn parts stem primarily from consideration of certain works by J. S. Bach. Still another more seriously misleading generalization appears in connection with a discussion of the trombone, where Michael Praetorius is quoted in support of a contention (made earlier in the same chapter) that the size of instrumental families tended to increase during the Baroque era. Here one must definitely take issue with the author, noting that he has apparently overlooked the fact that Praetorius, writing very early in the seventeenth century, was obviously describing the practice of his own time which was actually inherited from the Renaissance and cannot, therefore, be cited as authority for the practice of the entire Baroque period.

In the fourth chapter, dealing with some of the music played by brass instruments, Evenson rather arbitrarily sets up stages of evolution for brass writing. These seem questionable because of the limited number of examples from which the conclusions appear to have been drawn, and there are contradictions in the examples which have been used. For example, the heading of the first stage is given as "The Appearance of Separate Instrumental Groups in Idiomatic Style, Early Growth," and for the second stage the heading reads: "The Addition of Strings and Further Development of an Idiomatic Instrumental Style." The inclusion of two Gabrieli works, (Surrexit Christus and In Ecclesiis), under the first heading is somewhat disconcerting, since both have string parts and therefore seem to contradict the meaning of the second heading. Furthermore, the matter of idiom seems a bit forced in terms of these early examples, since one looks in vain for any difference between the style of the wind parts and that of the string parts, not to mention the fact that the style of all instrumental parts is very little different from that of the vocal idiom at this stage of history. In a later chapter the author does present a number of carefully selected excerpts which do indeed combine to make a case for the idea of the gradual development of a musical style appropriate to the brass idiom but these, for some reason, are not clearly identified with the stages of evolution set up in chapter IV.

To go on pointing out what this writer sees as individual and more or less isolated weaknesses would tend to convey a negative impression rather than the positive approbation which this thesis, taken as a whole, certainly deserves. The negative comments which have been offered above have indeed seemed necessary in the interest of intellectual honesty and in substantiation of the judgment rendered earlier in this review to the effect that this study attempts to include too many aspects of a difficult and demanding subject without doing full justice to all of them. One might add that the problem of scope also presents a problem of chronology, as has been implied in some of the comments already made in the course of this review. Evenson's study, in spite of its genuine merits, tends all too often toward generalizations implying that the Baroque era was a consistent and uncomplicated period of music history instead of dealing with the complexities resulting from the characteristic multiplicity of styles and practices, the continuing change and evolution of new forms, and the very important transition from the modal orientation to the concept of tonality. It is obvious that the author's intention was to isolate the special matter of the brass instruments, but there is a very real question as to whether such isolation should even be attempted when confronted with a period in music history so complex as the one selected.

Finally, one must emphasize that this study is a valuable contribution to our store of knowledge concerning the history of the brass instruments, and especially concerning the people who played them. Such a work has been needed, in view of the general historian's natural preoccupation with the important development of music for strings. The imperfections in the study are those to be expected in a work which is, in many respects, a pioneering effort. The questions which have been posed but not completely answered should certainly provide impetus for further scholarly work in this direction and it is a study with which all serious students of brass instruments should become familiar.

Farwell, Gaylord Hardy. Curriculum Planning in Music Education: (A Study of Certain Aspects of the Music Education Program in the Secondary School and the Involvement of Music Education Personnel in Organized Curriculum Planning Activities in Selected School Districts of Western New York). University of Buffalo, 1962.

Reviewed by Marilyn Pflederer

A cursory glance at the title of Farwell's study could be misleading. Curriculum Planning in Music Education leads one to believe that here is perhaps a theoretical study dealing with philosophical bases of curriculum building. But the remainder of the title which follows in parentheses quickly dissipates this anticipation, and we find simply a status study with data based on answers to an inquiry blank, that ubiquitous questionnaire. The purpose of this review is to summarize the study briefly and to point out its major strengths and weaknesses as seen through the eyes of one music educator.

The orientation of Farwell's study is that current thought in music education and curriculum planning emphasizes "the desirability of music education as a part of the general education of all boys and girls and the participation of the entire school staff in a program of curriculum reorganization which, hopefully, would lead to the improvement of instruction." Farwell first deemed it necessary to describe the existing situation. And this is what the thesis is all about: a study designed to learn about types of music activities, trend in enrollment in music activities, adequacy of facilities and equipment, integration of music with other subject areas, the involvement of music education personnel in curriculum planning activities, and the attitudes and opinions of both music educators and administrators concerning the role of music in the curriculum. Truly this is a large order for the best designed inquiry blank to fill!

Procedure:

A seven-page mimeographed inquiry blank with a cover letter was mailed as a pilot study to ten former colleagues who were practicing administrators and music educators in six school systems not selected for the final study. Simultaneously, a presentation of the background of the study was made to a graduate class of music educators under the supervision of one of the professors on the study committee. Their criticisms and suggestions for devising the final inquiry blank were invited.

The resulting inquiry blank was sent to an arbitrary sampling of forty-one Western New York school districts on the basis of their membership in the Western New York School Study Council. Farwell's assumption was that voluntary membership in the Council indicated the existence of a climate in the school system which would be more likely to foster organized curriculum planning activities. Two people in each selected school district received the questionnaire, the chief school officer whose name appeared on a list furnished by the Western New York Study Council and a member of the music education department faculty whose name appeared in the 1960-61 directory of the Erie County Music Education Association and the 1960-61 membership directory of the New York State School Music Association published in the October, 1960 issue of The School Music News. This inquiry instrument was sent under cover letters from the Study Council and from the investigator. Two follow-up letters were sent; letters of appreciation were later mailed to individuals completing the questionnaire.

Inquiry Blank:

The final inquiry blank was divided into five sections:

Part A--General Information about Enrollments and the Music Education Program in the School System

Part B--General Education: The Existence of Statements of Philosophy and/or Objectives

Part C--Music Education in General Education

Part D--The Music Education Program

Part E--Curriculum Planning in Music Education: The Involvement of Music Educators in Existing Curriculum Planning Activities

Findings:

The findings of the study resulted from a compilation of the returned inquiry blanks and were stated in terms of percentages. Thirty-six of the forty-one schools or 87.81 per cent of the school systems returned workable returns. Sixteen of the forty-one schools or 39.05 per cent of the school systems returned two separate workable returns. Some of the more interesting findings were as follows: (1) 72.22 per cent reported stated philosophies of general education; (2) 33.33 per cent of the school reported a stated list of objectives to be achieved through the implementation of the stated philosophy; (3) 61.11 per cent reported a periodic revision of the philosophy and/or objectives; (4) 90 per cent of the participating administrators and 96.88 per cent of the participating music educators or 94.23 per cent of the total participants indicated that they consider acquisition of learning, development of skills, formation of attitudes, and the development of a value system in and about music to be an essential part of general education (this in answer to a yes-no question!!); (5) 61.54 per cent of the participants considered appreciation of music as the single most important objective of a program of music education in general education. All of these findings were in answer to yes-no questions.

Generalizations from Answers to Posed Questions:

Among the generalizations drawn by Farwell were the following: (1) A majority of the school systems reported increased enrollments in music courses and activities. (2) Music teachers are not regularly involved in curriculum planning activities. (3) There was very little difference in the responses of administrators and music educators within the same school system to the inquiry blank regarding the role of music in general education, the desirability of flexibility in the daily schedule, and the willingness of music teachers to be involved in curriculum planning activities. (4) The dearth of offerings designed for the general student implies a need for concern about the development of suitable offerings which, hopefully, could lead to the development of a future audience of discriminating consumers of musical products. (5) there was an implication from the respondents as to a need for the development of flexible scheduling designs and for the recognition of the arts as esteemed disciplines in their own right.

Recommendations:

Farwell made several recommendations for music education programs and curriculum planning from the data gathered in his study. This reviewer believes that he could have suggested these recommendations without ever conducting a study. Indeed, in retrospect the study seems to have been made to prove the obvious Some of the recommendations were as follows: (1) an increased emphasis on the development of the orchestra and mixed choir programs; (2) the development of suitable courses at the secondary level designed to meet interests and needs of the student as an intelligent, discriminating consumer (of music); (3) the utilization of lay persons skilled in music to augment the efforts of the music education staff; (4) continuous evaluation of music education programs on the basis of a clearly defined philosophy of public school music education and objectives to implement that philosophy; (5) the establishment of suitable organization machinery to facilitate cooperative, continuous, comprehensive curriculum planning on a system-wide basis; (6) the involvement of lay citizens in an advisory capacity in curriculum planning activities in accordance with the recommendations contained in curriculum development literature and reiterated by the New York State Education Department. (This was the first and only time that this literature was mentioned which seems odd in a study supposedly dealing with curriculum planning.) In addition (7) the data indicated a need for schedule designs with sufficient flexibility to meet the needs and interests of all students and curriculum areas.

Major Strengths:

The thesis was rather well-written and terms that have become a part of common educational parlance were well-defined. Farwell candidly stated that he recognized the inherent weakness of the questionnaire method of obtaining data. To try to overcome this admitted weakness, he undertook a pilot study to aid in designing the final inquiry blank. The study itself could be replicated, thus fulfilling one criterion of the scientific method of inquiry.

Major Weaknesses:

As background for the study Farwell outlined current educational thought before and after Sputnik, showing the need for general education and music's role in this context. He delimited his review of the literature from January, 1955 to September, 1960, in order to trace trends in thought both B.S. and A.S. (before and after Sputnik). It was at this point that the reviewer's expectations for the study again led to channels other than those pursued by Mr. Farwell. For Farwell's chapter on a Review of the Literature presented the viewpoints of educators on general education and the role of music within general education, another factor which could lead one to expect a philosophical type of study. These viewpoints, however, were merely presented in the form of quotations. At no point in the study were implications drawn from this literature, nor was the literature used as a basis for the derivation of program objectives that would facilitate curriculum planning. The reviewer assumes that parts of the questionnaire were based on this literature, but the connection was not clearly defined.

The reviewer believes that a philosophical treatment of curriculum planning in music education would have been more in line with the general background of the study and related literature than the study undertaken. In this vein she would like to cite an excellent dissertation by Ruth Colwell, The Development of a Theoretical Basis for a Course in Music Appreciation at the College Level. This study included an exhaustive review of the literature on general education and music within general education from which principles and program objectives were drawn. But Mr. Farwell elected to do a descriptive status study; his review of the literature should have included studies of this type that could have been used as models for his study.

More attention should have been given to the construction of the questionnaire and its validation. It is presumed that the pilot study and the suggestions made by a graduate seminar were used as validating instruments. On page 52 of his thesis Farwell lists criteria that must be met in the construction of a questionnaire. He does not furnish documentation for these criteria; yet they are to be found in Good and Scates' Methods of Research. Surely this is a violation of scholarly research. To make matters worse, Farwell misquotes one criterion when he writes, "The ideal questionnaire should not be too suggestive, but on the other hand, not too stimulating." The criterion in Good and Scates reads, "The ideal questionnaire must not be too suggestive, or on the other hand, too unstimulating." Is it possible that in this instance the difference between "stimulating" and "unstimulating" could simply mean the difference between a valid and an invalid questionnaire?

The Questionnaire, or inquiry blank as Farwell chose to call it, consisted mainly of yes-no questions with some personal comment or opinion invited. Very few categories or continuums for answering were included, a factor which caused Farwell simply to list the comments in his presentation of the data. Yet Good and Scates in Methods of Research state that in editing returns an investigator must bring the used or intended summarizing categories into line with comments written on the questionnaire. Farwell could not do this since no intended summarizing categories were evident, at least to this reviewer.

A lack of scholarship obtruded in several other instances. On the first page Farwell defined the major goals of music education. Since no documentation was given we can conclude that these are major goals in his opinion only, a point which should have been clarified. In the concluding chapter the significance of the study is attested because "it (the study) attempts to ascertain whether recommended procedures and curriculum planning machinery are being used in curriculum modification in the school systems participating in this study." (p. 158) The reviewer could not find the criteria for recommended procedures and curriculum planning machinery definitely stated anywhere in the study. Farwell did

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[1] Good, Carter V. and Douglas E. Scates. Methods of Research. New York: Appleton-Century-Crofts, Inc., 1954. pp. 615-16.

[2] Ibid., p. 628.

quote from a small amount of literature on the "Role of Music Educators in Curriculum Planning Activities," but this is as close as he came to establishing any criteria. And in his final chapter, Summary, Generalizations, and Recommendations, Farwell does get around to stating that "Two of the guidelines of effective curriculum planning expressed in the literature are that curriculum planning should be continuous and comprehensive." (p. 130)

Farwell mentioned the "Trump reports" in passing (p. 132), and again there was no documentation. It appears that these reports on secondary school curricula might have been cited in the review of the literature and perhaps used as a basis for establishing criteria for recommended procedures in curriculum planning.

If descriptive reports of the existing status of public school music education are needed before curriculum revision can take place, then Farwell's study is a step in the right direction. But a description without a blue-print for change is an elaboration of the obvious. And quotations do not necessarily furnish a convincing blue-print for change. This reviewer would like to suggest that that "next step" is to derive program objectives from both past and current philosophical thought and to subject the prevailing situation to a rigorous examination in the light of these objectives. Then, and only then, can suggestions for curriculum revision be confidently recommended.

Faulds, Bruce D. The Perception of Pitch in Music.* Princeton University 1959.

Reviewed by Edward L. Rainbow

The Perception of Pitch in Music was part of a larger project entitled Mathematical Techniques of Psychology. This project was supported in part by Princeton University, the Office of Naval Research, the National Science Foundation, and the Princeton Educational Testing Service.

Purpose. Faulds states that the purpose of the study was "...to examine the sense of pitch in a variety of situations, some musical, others not, with the object of deciding the relations between these areas: whether people have one sense of pitch or several, how are they related, and how do we best predict success in music studies" (p. 2).

Problems. Dr. Faulds planned a study that would: (1) "throw light upon the manner in which a series of tests, partly musical in content, partly physical, would work together. It would pay particular attention to the borderline between music and pitch, with tests both musical and involving small frequency differences" (p. 14). (2) "pay attention to the roles of memory and pitch and their interaction" (p. 15). (3) "be able, hopefully, to answer questions of validity by examining students whose musical ability could be independently judged, and would show wide variation" (p. 15).

Method. To investigate the stated problems, Dr. Faulds designed an experimental study. Sixty-seven students from the 1958-59 Westminister Choir College freshman class and 35 volunteers from Princeton University introductory psychology classes participated in the study. For the purposes of the study the Westminister students were considered to be musical, while the Princeton students were considered to be non-musical. A battery of 15 tests was then administered to the 120 subjects. This test battery consisted of excerpts from standardized tests and tests that had been devised by Faulds. The tests utilized were:

1. Pitch test. This was a shortened version of the Seashore Pitch Test. It contained 35 of the original 50 items.

2. Detection of changes in a chord. The test utilized was test number 2 from Wing's Test of Musical Intelligence.

3. Interval discrimination. "This was a shortened version of Lundin's test. Forty of the 50 items were cast as three- rather than two-choice..." (p. 22).

4. Detecting departures from true octaves. "The items of this test consisted of two notes: the second could be twice the frequency of the first, or somewhat more, or somewhat less than this and the subjects were asked to way whether this interval was exactly an octave or sharp or flat" (p. 25). This test was constructed by Faulds and contained 25 items.

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*Order number 59-5171, mocrofilm $2.50, xerox $4.80

5. Detecting departures from true scales. "Here an eight-note scale was played, but sometimes did not stay true, but went progressively sharp or flat" (p. 26). The test was constructed by Faulds and contained 25 items. The subjects tested were to decide if (a) the scale finished too high, (b) the scale finished correctly, (c) the scale finished too low.

6. Detecting departures from the true of a tone. "This was similar to test 5 except that instead of a scale the item consisted of the first four bars of the tune Frere Jacques"(p. 26). The subjects being tested were required to make decisions similar to those made in test number 5. This test was constructed by Faulds and contained 25 items.

7. This test was similar to the pitch test (test number 1) except that a background of white noise was superimposed.

8. Tonality. The test utilized was Franklin's test of Tonal Musical Talent.

9. Pitch test with bands of white noise. "The choice of cutoff frequencies was arbitrary, except that a range of items was chosen that would hopefully be discriminating as regards difficulty, and which would not use frequency variations of such a size that allowance would have to be made for intensity. In fact an easy item was formed by the bands

   1200)
   900) c/s and 1300)
   920) c/s

   and a difficult item by the noise bands

   1200)
   900) c/s and 1220)
   920) c/s

   One or two observers were asked at this stage to judge on intensity as a check, but could detect no differences " (p.20). Fauld's description of this test leaves much to be desired.

10. Pitch test with time delays. This was the same test as number 1 except an interval of six seconds was put in between the first and second stimuli.

11. Memory in chord sequences. This test was constructed by Faulds and contained 30 items. Sequences of four, five, or six chords were played and the subjects had to say whether the first and last chords of the sequence were the same or different.

12. Timbre test. "...it was decided to use the harmonics built in on the drawbars of the Hammond organ to supply the different timbres. That is, two slightly different timbres were set upon the drawbars of the instrument's two manuals, intensities were adjusted until judged equal by two or three judges, and records of the two notes were made on tape" (p. 24). This test contained 35 items and the subjects being tested were to decide if the first and second stimuli were the same or different.

13. Tonal memory. The test utilized was the Seashore Tonal Memory Test.

14. Timbre test with time delay. This was the same test as test number 12 except a time delay of five to seven seconds was inserted between the two stimuli.

15. Auditory digit span. "It was decided to put into the battery an auditory digit span test, as similar to Kelly's test number 5 as could be judged from his report (unpublished Doctoral Dissertation, Princeton University, 1954). In effect the test is an adaptation of the time-honored digit span item of the Binet scale, adapted for group use" (p. 23). This test contained 18 items and apparently was constructed by Faulds.

Results. The results of the 15 tests were analyzed by utilizing the techniques of factor analysis. The scores of the subjects on the separate tests were intercorrelated and factored. On rotation three factors were found. Factor A was identified as music. Tests 4, 5, 6, 8, and 11 loaded the highest with this factor. Factor B was identified as pitch. Tests 1, 2, 3, 4, 5, 6, 9, 10 and 13 loaded the highest with this factor. Factor C was identified as memory. Tests 5, 10, 12, 13 and 14 loaded the highest with this factor.

Faulds then utilized the techniques of multiple regression analysis as predictors of two criteria. The first criterion was "an arbitrary criterion which assigned a score of one to every subject in the first group, zero to every subject in the other. The attempt with such a criterion is to predict the institution of any given subject..." (abstract of dissertation, n.p.) Tests 2, 4, 5, 6, 8 and 11, those tests which, in general, loaded highest on the music factor (Factor A), were determined the most effective predictors of the criterion measure. The multiple correlation was 0.68. The results of an ear-training test given at Westminister Choir College were made available to Faulds. These results were utilized as the second predictor criterion. A multiple correlation of 0.53 was found with this criterion. The tests associated with the pitch factor (Factor B) were found to be the most effective predictors of the criterion measure.

Conclusions. Faulds offers the following conclusions based upon the results of the study:

1. "The factor structure suggests factors corresponding to pitch, music and memory which are slightly correlated" (p. 42).

2. A memory factor, found in studies by Karlin and Franklin, has been confirmed.

3. The finding by Karlin and others that the digit span intelligence-type test has little in common with auditory memory has been confirmed.

4. A music factor, found by Wing and Franklin, has been confirmed.

5. Using factor scores as predictors of the institution of the various subjects, a multiple correlation of 0.68 was found. The largest weight of these three is that of the music factor score (Factor A). This, therefore, confirms the importance of the music-type tests as against the more physical-type test. Within the musical group of students, and against a criterion of an ear-training test in music, the multiple correlation was 0.53, and the most important predictor now becomes the pitch factor score.

Comments. The subject of Dr. Faulds' dissertation is of vital importance to most music educators and Dr. Faulds should be commended for selecting the topic. The dissertation is brief (47 pages including bibliography) and brevity in doctoral dissertations can be a virtue. It is this reviewer's opinion that brevity in a dissertation ceases to be a virtue when it results in the omission of items that may lead the reader to a clearer understanding of the study. In the case of this particular study, perhaps it was Dr. Faulds' desire to be brief that resulted in the omission of certain items that are normally included in reports of experimental studies. This reviewer believes that the following omissions detract from the study:

1. Lack of complete information on tests utilized. Persons doing experimental studies have generally attempted to provide complete information on the research tools they have utilized. This information is provided to enable future investigators to replicate all or part of the experiment and to evaluate the results and the conclusions of the experiment with due regard to the research devices that have been utilized. Dr. Faulds has not provided complete information on the test battery that he utilized in this experiment.

   Test 1 contained 35 of the 50 items found in the Seashore pitch test. Tests 7 and 10 were also shortened versions of the same test with either bands of white noise superimposed upon the test or with time delays inserted between stimuli. This reviewer poses the following questions: What is the reliability of this pitch test when 30 percent of the items are removed? Which items were removed? What are the reliabilities of the pitch tests that have the added variables of white noise and time delays?

   Dr. Faulds has not stated the edition of the Seashore test that he utilized. He states, "A 78 rpm record was taped, and 35 items were taken as the test" (p.20). The 1919 and the 1939 editions of the Seashore Measures were recorded on 78 rpm discs. Because the 1954 edition of the test is available only on a long-playing disc, it therefore must be assumed that Dr. Faulds used one of the earlier editions. Dr. Faulds' bibliography, however, does not cite either the 1919 or 1939 edition of the test.

Test 13 is a shortened form of the Lundin Interval Discrimination Test. In addition to shortening the test, Faulds cast the answers as three-choice rather than two-choice. Lundin, on page 219 of his book *An Objective Psychology of Music*, reports the reliability coefficients of this test range from .71 to .79. Faulds, however, does not report the reliabilities for the shortened and revised form of this test.

Tests 4, 5, 6, 9, 11, 12 and 14 were constructed by Faulds for this experiment. Again, Faulds fails to provide vital information on these tests. Were reliabilities ever determined for these tests? How were these tests constructed? Did these tests undergo careful study and revision before they were utilized in the experiment? The description of the development of test number 12, quoted in the abstract above, could lead to a possible false conclusion that the tests were constructed in a rather careless fashion.

2. *Failure to cite sources*. In this reviewer's opinion, one of the features of scholarly writing is the proper citation of quoted material. In his dissertation Dr. Faulds failed, on numerous occasions, to indicate sources of cited material. For example, Dr. Faulds discussed and utilized parts of tests constructed by Wing, Seashore and Lundin, and yet he did not cite these tests in a footnote or in the bibliography.

3. *Omission of desirable statistical data*. On page 35, Faulds states: "It is of interest that this test (timbre test) gave substantial mean difference in favor of the Princeton group." Table 1 presents the mean scores obtained by the Princeton and Westminister students on each of the 15 tests. Utilizing Table 1 it is possible to compare the mean scores obtained by the two groups of students on each of the tests. However, the reader is not informed if the observed differences are statistically significant. It is this reviewer's opinion that Dr. Faulds should have included this information in Table 1, especially since he found it necessary to note substantial differences in observed mean scores.

4. *Omission of section devoted to the definition of terms used*. Dr. Faulds' dissertation is a study that crosses two disciplines, music and psychology. It is possible that some

of the terminology used by Dr. Faulds does not convey an identical meaning to both the musician and the psychologist. For example, the terms "sense of pitch," "perception of pitch," "success in music," are terms that could conceivably convey one meaning to a psychologist and a different meaning to a musician. Perhaps the confusion in terminology might even result in a musician and a psychologist receiving different ideas from reading the problem of the study.

In a study of this nature it seems appropriate for the author to clarify terms that may cause misunderstanding and confusion. This reviewer regrets that Dr. Faulds did not choose to devote a section of his study to defining some of the terms that he utilized.

Perhaps this reviewer has been overcritical of Dr. Faulds' study. If this is the case, an apology is offered. Dr. Faulds has taken a rather sophisticated statistical technique and has demonstrated how this technique can be applied to an experimental study in music. For this we can be thankful. This reviewer believes, however, that the omissions noted above, particularly the lack of definition of terms, seriously detract from the study and may even keep many music educators from appreciating the true value of the experiment.

Fred, Bernhart G. The Instructional Values of an Exploratory String Instrument in a Fourth Grade. Northwestern University, 1956

Reviewed by Anita Kalis Sammarco

Introduction

The use of exploratory instruments has become an accepted part of the music program in most schools. These instruments have served, primarily, as a means of forecasting the success children will achieve when they study an orchestral or band instrument. Dr. Fred's study was concerned with the use of an exploratory string instrument as a meaningful musical experience in the classroom and not as a procedure to discover those students best suited to receive specialized training in an instrumental class. Through review he found that little had been done in terms of experimental studies and no specific controlled studies were found in which a string instrument had been used in connection with the classroom music, taught by the classroom teacher, with a follow-up attempt to determine how effective the instruction was.

The Problem

The study is based on the contention that the use of exploratory instruments as a part of the music program in the self-contained classroom, taught by the classroom teacher with guidance by a specialist, could give each child an opportunity to grow musically.

The question posed is:

> Is it possible for instrumental experiences to aid in the development of the singing voice, the improvement of skills, the acquisition of deeper appreciation of music, the development of self-expression, the development of note reading and music fundamentals, and the promotion of greater interest in classroom music at the fourth grade level?

Chapter I states the author's purpose of the study. "The purpose of this study was to ascertain the effect of instruction using a string instrument on the musical growth as determined by scores on standardized tests and on motor dexterity as determined by a rate of manipulation test."

Development of the Instrument

After investigating writings and reports concerning the construction of the violin, Dr. Fred decided that a satisfactory exploratory string instrument could be devised. Chapter II discusses in detail the author's trials and errors in the development of the instrument. The three-stringed fretted instrument which was designed and developed met the predetermined specifications:

1. The instrument should be capable of being bowed and plucked.

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* Order number 18,987, microfilm $3.25.

2. The design should be simple.

3. The size should be such that fourth grade pupils would be able to use it readily.

4. Its tone should be pleasing.

5. It should be entirely chromatic in its range.

6. The tuning problem should be kept at a minimum.

7. The instrument should be sturdy.

8. It should be easy to play in the early stages and easy enough for a nonspecialist to teach.

9. The instrument should possess a range within which a large number of songs in the basic music texts lie.

10. The initial cost of the instrument should be relatively low.

An instrument for each child in the study group was produced commercially.

Method and Procedure

Two fourth grade groups were selected at random from alphabetized class rolls with the children being placed either in Group A or Group B. Half of the members of each classroom were assigned to the control group and half to the experimental group. Each group contained 28 students and were taught music by the same classroom teacher. During the pre-experimental period, the music classes met three times weekly for a 20-minute period. The teacher had complete freedom to select the music material during the pre-experimental period with no prescribed course of study, but the author suggested that rhythmic, playing, creative, listening and singing activities be included. It was stressed that the teacher was not an accomplished musician and at times felt insecure in teaching classroom music.

Following the pre-experimental period the two groups were given two achievement tests in music and a manipulation test. The tests were:

> M. Lela Kotick and T. K. Torgerson, The Diagnostic Tests of Achievement in Music--Form A and Form B. Ten tests designed to objectively evaluate an individual's mastery of the basic skills and theory needed to read vocal or instrumental music.
>
> William E. Knuth, The Knuth Achievement Tests in Music, Division I--Form A and Form B. Evaluates a pupil's reading difficulties in terms of comprehension or in physical expression. The pupil hears complete musical phrases and his comprehension and recognition of the phrases heard are measured.

> Botts, Gilbert L., Minnesota Rate of Manipulation Test. A means of measuring speed in gross finger, hand and arm movements. This test has not been standardized for use in a musical situation.

The statistical data showed that the two groups were well matched in the areas being tested--achievement and motor dexterity.

The experimental phase of the study began when the experimental group was given instruction on the exploratory string instrument concurrent with the singing activity. The control group continued to sing and work with fundamentals of music. Both groups were still taught by the same classroom teacher with a skeleton daily lesson plan provided by the author. The method for teaching the string instrument was the rote-number method using song material from the classroom text, The American Singer, Book IV, Second Edition. A booklet was duplicated for the children to be used with their song books. The booklets contained the name of the song, page number in the song book, key signature, meter signature, duration pattern in line notation with fingerings and string name. This phase of the study was conducted daily for 24 class periods near the close of the school year, followed by readministration of the alternate forms of the music achievement tests and a retest of the manipulation test, given individually.

The results of the tests of achievement in music were treated statistically to determine whether the changes made between the groups were significant. It was found that no statistically significant difference in the musical achievement or motor dexterity of the two groups existed. These statistical results were interpreted in light of the observational material noted during the course of the experiment.

Chapter V summarizes the results of the study:

1. The two groups achieved substantially the same despite the contrasted presentation and emphasis.

2. An exploratory-type string instrument that could be bowed and plucked, easily played and readily taught was successfully developed and produced commercially.

3. The children experienced success in playing the instrument from the start and had an enjoyable musical experience.

4. The use of the instrument was highly motivating to the children.

5. Basic string experiences can be presented in an effective manner by the classroom teacher who has not had previous training in playing or teaching a string instrument.

6. Use of a string instrument can provide variety to the classroom music activity.

7. The use of a manipulation test to determine motor dexterity of the arm, wrist, hand and finger indicated that there was a relationship between scores secured on the tests and the manipulative ability of the children on the string instrument.

Implications for Further Research

The author is of the opinion that his results would be substantiated if a similar study would be carried on for a longer period of time with a larger number of classes at different grade levels. He further suggests that research should be conducted to determine the use of this string instrument as a prestring device. Other suggestions given by the author are:

> Further study of the instrument itself for improvement and a means of reducing the cost.
>
> Research should be conducted to determine the desirability of providing a sequence of instrumental experiences at the elementary school level and extending into the junior high school.
>
> Research should be conducted to determine how the bow may be improved to facilitate easier holding as well as proper holding.
>
> Research should be conducted to determine the feasibility of using motor dexterity tests in connection with instrumental music.
>
> Study of the utilization of exploratory devices in teacher training classes.

Comments

Since the emphasis in this study was to measure the effectiveness of using the instrument in conjunction with singing and since the learning of the instrument was secondary to the singing by the group, more could have been done to measure the improvement made in singing. How effectively did it help the "out of tune" singer? Was tone quality improved? Did the children sing more expressively? These are a few questions which need answering.

The study was completed nearly a decade ago, but it is of current interest in light of the growing interest in the Suzuki method of violin teaching in our public schools which stresses the rote-number approach which also uses familiar song material. However, Dr. Fred's concern was with the musical growth of the child through use of the instrument with no emphasis on the proper playing technique of the instrument.

This was clearly illustrated by the photographs included in the study showing some children holding the instrument like a ukulele, some in approximate violin position and some imitating a cello position, but with the instrument resting on the knees. Would these incorrect habits established in a pleasurable situation plague a student who then studies the real violin or will this type of motivation spur him on to learn the correct technique more readily?

Although the study was limited to one grade and was not large, Dr. Fred has presented his statistical material effectively and is to be commended for developing a usable string instrument as well as a workable method for its use by the classroom teacher who has had no experience in playing or teaching a string instrument.

Getchell, Robert Ward. An Investigation of, and Recommendations for, the Beginning Conducting Class in the College Curriculum.* University of Iowa, 1957

Reviewed by Lloyd Oakland

At the offset, the author refers to the fact that little has been done by educational organizations or accrediting agencies toward recommending general objectives for a collegiate course in elementary conducting--objectives which would anticipate needs of choral and instrumental directors in terms of preparation for conducting performing organizations in public schools. Introductory statements in the thesis point to the differences of opinion as to what the course content of a beginning conducting class should include, and more specifically, whether the course should be directed toward instrumental conducting or choral conducting or whether initial instruction in conducting should be the same for both instrumental and choral directors. Further, the author stresses the lack of awareness of the importance of thorough and sound training in basic conducting skills, and the lack of textbook material at the beginning level, material that is practical for the complete novice in conducting. The foregoing facts and questions presented the need for examination of existing textbooks, articles, and courses of study in conducting at the collegiate level.

The Problem

The author's main concern was to develop specific suggestions and recommendations for improving the effectiveness of beginning instruction in conducting, the study to include three main problems: (1) to determine the current status of the beginning conducting class in American colleges and universities (content, teaching procedures, etc.); (2) to discover the most common problems encountered by students and to prescribe corrective solutions; (3) to develop a logical and progressive course outline at the collegiate level.

Limitations

The study concerned itself with basic skills only, no attempt being made to include intricate conducting problems or techniques related to rehearsal procedures, program building, and so forth.

Method

The survey method was used to determine the present status of beginning conducting classes in colleges and universities, and the historical method was used to examine texts, existing courses of study and examinations. Research technique involved a questionnaire, correspondence, and the author's personal experience. The foregoing method was used in developing recommended objectives for a course of study in beginning conducting.

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* Order number 23,739, microfilm $3.85.

Study Data

The excellent percentage of returns by questionnaire respondents indicated considerable interest in the study. The reviewer will not concern himself with the author's interpretation of data, except to state that the vast amount of thoughtful consideration accounted for significant and interesting content. Further, the author's critical review of textbook material and courses of study, combined with evaluation of his own teaching experience, presented a convincing basis for recommendations and solutions to existing problems. Since space would not permit even a cursory review of data, the reviewer will limit himself to the recommendations related to objectives for, and content of, the beginning course in conducting.

Recommended One-Semester Course Outline for a Beginning Conducting Class

Objectives

1. The course in beginning conducting should be so fitted into the music curriculum that it precedes the student teaching program, but also follows certain theory and methods courses normally considered "background" courses for conducting; e.g., ear training, sight singing, basic harmony, etc. (Note: In the instance of those schools requiring a full four-year conducting program, the course of study, at any one point, should not presuppose a greater technical or theoretical knowledge than the "background" courses have provided up to that point.)

2. Enrollment in the beginning conducting courses should be divided into sections limited to a maximum of not more than 10-15 students per section, in order to afford each student a maximum number of individual conducting opportunities during the semester (or quarter).

3. The course in beginning conducting should make no distinction between instrumental and choral conducting but should be a general course which introduces and develops techniques which are applicable to either a choral or an instrumental ensemble. Specialized problems, peculiar to one medium or the other, should be reserved for a more advanced course.

4. Integration of other subject matter into the beginning conducting course should be discouraged, but, where necessary, such integration should be held to a minimum and include only subject matter that relates itself directly to conducting; e.g., transposition, seating arrangement for choral and/or instrumental organizations, rehearsal procedures, etc.

5. In addition to any other mediums that may be available--i.e., recordings and piano--every possible effort should be made to furnish regularly some form of live musical ensemble as a laboratory group for the student conductor.

6. The final examination should, insofar as possible, include applied conducting, reserving the written part of the examination for testing the student's knowledge of miscellaneous information (e.g., transposition, knowledge of clefs, musical terms, etc.), which may not feasibly be included in the applied examination.

7. The beginning conducting course should be so designed to train the student conductor in the fundamental techniques of conducting, with an emphasis on baton technique. The student, upon completion of the course, should be able to demonstrate facility in:

    a. Conducting, with or without a baton, the common meter patterns (i.e., conducting in 1, 2, 3, 4, and 6). Also to demonstrate an introductory knowledge of the sub-divided two-, three-, and four-beat patterns.

    b. Accurately establishing and maintaining tempo according to commonly used metronomic markings (e.g., 60, 72, 120).

    c. Comprehending the meaning and significance of commonly used musical terms and symbols.

    d. Understanding the clefs and transpositions used by the instruments of the band and orchestra. (It is recommended that the technique of reading clefs and transpositions be first introduced in one of the "background" courses and that the beginning conducting course be used as a medium for practical application of this knowledge.)

    e. Indicating, clearly, preparatory beats and attacks on all counts, or fractional parts of counts, of a measure in any of the above common meters.

    f. Indicating holds (release type and nonrelease type) on all counts and half-counts of the common meters.

    g. Indicating releases on all counts and half-counts of the common meters.

    h. Indicating dynamic variations through physical gesture.

    i. Indicating, with clarity and confidence, simple accelerandos and ritards.

    j. Fitting baton gestures to the style of the music in the following three styles: legato, staccato, marcato.

k. Use of the left hand, both as a rhythmic device and as an interpretive device.

l. Conducting with confidence and musical perception, a composition of Class D or easy Class C difficulty, using a 2-line score (piano-conductor) or a 3-line score.

Course Outline

Chapter I. Preliminary Problems

The baton. It is recommended that the student become familiar with the use of the baton; however, by the conclusion of the first semester, his conducting should be equally effective with or without a baton. The author recommends that all students use right hand for baton and beat hand.

Baton grip. Avoid "teacup" and "hammer" grips. When the baton is properly held, there should be a straight line from elbow to tip of baton.

Conductor's stand. The stand should be adjusted below waist level to allow maximum freedom of action (angle approximately 15 degrees).

Attention position. With wrists slightly "cocked," forearms held at an upward and outward angle, elbows away from body, palms of hands facing floor at approximately eye level, the position calls for attention and allows the conductor to survey the group and fix in his mind the tempo and style of music before giving the preparatory beat.

The preparatory beat. With confidence and assurance, indicating tempo, dynamics, and style, the preparatory beat is given as a beat which immediately precedes the entrance or attack. Introductory practice is limited to preparing for attacks on the first or main count in the measure.

Chapter II. Conducting in Three - ($\genfrac{}{}{0pt}{}{3}{4}$ $\genfrac{}{}{0pt}{}{3}{2}$ $\genfrac{}{}{0pt}{}{3}{8}$ $\genfrac{}{}{0pt}{}{9}{8}$)

The author discusses three-beats in varying styles and tempos without subdivision of beat for $\genfrac{}{}{0pt}{}{3}{2}$ and $\genfrac{}{}{0pt}{}{9}{8}$. It is recommended that the student should picture an imaginary horizontal line, below which the beat does not travel, and that the early stages involve right hand only. Students learn to adjust size of beat to style and tempo.

Chapter III. Conducting in Two - ($\genfrac{}{}{0pt}{}{2}{4}$ $\genfrac{}{}{0pt}{}{2}{2}$ $\genfrac{}{}{0pt}{}{2}{8}$ ¢ $\genfrac{}{}{0pt}{}{6}{8}$ $\genfrac{}{}{0pt}{}{6}{4}$)

Author suggests using both hands at this point (after gaining facility in right hand alone). Begin interchanging two and three beats in various exercises, keeping value of beat note constant. Apply variations in tempo and style.

Chapter IV. Conducting in Four - ($\frac{4}{4}$ $\frac{4}{2}$ $\frac{4}{8}$ $\frac{12}{8}$)

Traditional pattern is practiced in much the same manner as for $\frac{3}{4}$ and $\frac{2}{4}$, combining all previously-learned beat patterns in exercises involving many tempo changes and varying styles. Attention is directed to rhythmic nature of beat, requiring slight accelerando in movement from one beat to another. Again practice with both hands is recommended following development of facility in right hand alone.

Chapter V. Conducting in Six - ($\frac{6}{8}$ $\frac{6}{4}$)

Two types of beat pattern are recommended--the German style (down, left, left, right, right, up) and the Italian method (down, right, right, up, out, in). The latter is useful in an accelerando from six to two beats, or vice versa. Exercises in interchanging the six-beat pattern with previously learned patterns is recommended.

Chapter VI. The Release

Remaining beat-patterns are set aside at this point to consider and practice releases. First, with a slight upward prebeat, a release is executed downward and inward, indicating a precise stoppage, as at the close of the music. Second, with a slight upward prebeat, the release is executed by a downward and outward movement--this type of release is used between movements in a composition, or in any situation involving continuation of the music following a break. Releases, just as attacks, must be prepared and executed with confidence, keeping in mind the style of the music and the character at the moment of release. Height is a factor related to vision level and the demands of the music. Normally, the speed of the release consumes a full beat in the tempo being used just prior to release.

Before proceeding to further work, the author recommends at this point in the study that students should be able to diagram and execute releases on all main counts of meters introduced thus far. Short, practical exercises should be developed for this purpose.

Chapter VII. Pick Ups

The techniques of indicating entrances which occur within a measure on main counts, or on a fractional division of a count, are introduced at this point. Space does not permit review of the many problems and suggested practice. Basic rules stated simply are as follows: (1) entrance on any main count requires a preparatory beat comparable to the beat preceding an entrance beat; (2) entrances on the fractional division of a count require as a preparatory beat at least the main count of which the fractional pick-up is a part. It is suggested that students practice (with live group) many varied musical examples, the aim being basic skills related to pick-ups. Development in this regard, including extremes in styles and tempo, is to be absorbed into routine practice as students become more adept.

Chapter VIII. Holds

Practice for the hold, or fermata, concerns two types: (1) the release-type hold; (2) the nonrelease-type hold. Students are made aware of styles and musical judgment in relation to the length of holds, and are assigned practice units which provide breadth in experience as well as confident skill.

Chapter IX. Tempo

Changes in tempo affect the size of the beat in much the same manner as changes in volume. Likewise, style of beat is involved. Students should practice (live groups) musical examples introducing much variety in tempo. A steady tempo being the basic skill, the student should now practice gradual accelerandos and rallentandos involving changes from one beat pattern to another. Tempo markings and emphasis on "style" should be a part of musical excerpts and examples to be practiced.

Chapter X. Dynamics, The Left Hand

Thus far in the course outline, the student has been exposed to varying levels of volume in which the dynamic level remained constant. Introduced in Chapter X are the problems related to sudden or gradual dynamic changes within a musical composition. Practice may include:

1. Use of both hands in beat pattern for crescendo, etc.

2. Left hand indicating dynamic change, whether gradual or subito.

3. Other uses of left hand.

Chapter XI.

1. Conducting in One ($\frac{3}{4}$ $\frac{3}{8}$)

2. Sub-Divided Beats ($\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$)

Conducting one in a measure should involve both legato and staccato styles in a variety of musical examples and styles.

Subdivision of basic beats, normally introduced and practiced during the second semester or second conducting course, is mentioned only briefly for that reason. The very important factor in sub-division is that the main beats remain basically the same in regard to position. In fact, the sub-divided beat is a second motion in the same direction as the main beat, smaller in size unless special treatment demands otherwise. The author provides diagrams and musical examples for the main sub-divisions.

Re-emphasized in this chapter is the fact that "style" should be one of the main goals of the course, and should be an integral part of every lesson, every project, and every musical example.

Suggested Written Conducting Examination

The examination, prepared by the author and based on the Course of Study, covers musical terms; meter signatures; tempo markings; diagrammed beats; attacks, releases, and holds; dynamics; tempo changes; and style. The reviewer recommends for interested teachers careful study of the well-prepared examination.

Critique

Evaluating the course of study on the basis of stated limitations, the reviewer found it to be practical for the initial instructional experience in conducting. College and university departments of music, preparing students for public school conducting, should consider unifying objectives and content for the course in elementary conducting, using Dr. Getchell's outline as a basic guide.

The reviewer commends the author for a significant contribution to the training of music students, and offers only a few observations related to the course of study.

First, it is the opinion of the reviewer that the study of conducting should begin with a thorough consideration of the historical development of conducting, beginning with the foot stamping and chironomy used by the early Greeks, continuing through the development of music itself. Especially significant is the historical development which led to recognition of conducting as an art. To understand and appreciate the full meaning of conducting as a communicative art, students should be familiar with its historical background.

Second, the reviewer believes that conducting students should be more fully informed in regard to factors responsible for successful conducting. Motivation for serious study of music theory, keyboard, music history, orchestration, composition, and music literature is extremely important in the first consideration of conducting skill. Baton or hand skill in conducting, while very important, is only the means to more significant ends. Even a child can develop surprising baton skill. Thus students must realize that basic baton skill is only the beginning, and that the conductor's ability to read a score, to interpret the score with authority based on knowledge of music, and to possess special skills related to voice and instruments are the factors directly related to success in conducting. Students often become enamored with baton motions, developing false notions as to the importance of hand movement. The reviewer recommends that students understand, at the offset, what is involved in developing a genuine conducting art.

Third, the reviewer feels that frequently too much time is easily spent with simple, fragmentary musical examples in conducting. During more than 25 years of teaching the first course in conducting, the reviewer has used more and more real music, attacking many problems head on, and requiring the analysis and practice necessary to lead classmates effectively. Using vocal and instrumental arrangements in at least four parts, students do not get married to a single line of music. In fact, they should be required to sing the vertical harmony in their scores as well as the single lines. Thus, the initial experience in conducting can involve the elements of music (phrase, harmony, counterpoint, form, etc.) from early stages of development in baton technique. Further, music provides more convincing reasons for changes in baton and left hand technique, as compared to the use of fragmentary exercises. In any case, exercises should be followed by application in simple scores, using both vocal and instrumental sources.

Fourth, the reviewer has found that students can progress beyond the limitations of Dr. Getchell's one semester course in a typical, three-credit quarter or semester plan. It is suggested for the final weeks of the course that students develop the ability to handle simple cross-rhythms, conducting two against three, and three against two. They should be able to clap three and sing in two, etc. More complicated cross rhythms and multiple rhythms should not be attempted until second or third quarter of instruction. Further, students can relate basic baton technique to other applications, such as 5 and 7 beats, without complicating development. For example, $\genfrac{}{}{0pt}{}{5}{4}$ or $\genfrac{}{}{0pt}{}{5}{8}$ should be applied to two beats per measure; to subdivided two (using half of subdivided two and half of Italian $\genfrac{}{}{0pt}{}{6}{8}$); to five beats (2-3 or 3-2) using a combination of $\genfrac{}{}{0pt}{}{4}{4}$ and German $\genfrac{}{}{0pt}{}{6}{8}$. Musical examples are easy to find. It is the reviewer's feeling that basic conducting courses should demand much practice, study, and preparation outside of class, making possible more depth in content.

Fifth and last, the reviewer stresses even more the communicative features of conducting in all aspects of technique. For example, the release should reflect the music at hand, varying in size, direction, and spirit according to tempo, dynamics, style, character, mood, and period. Never, in any use of technique, should relationship to style and musical thought be forgotten. This type of attention to musicianship throughout the course aids the student in keeping his perspective centered on the music itself.

In conclusion, the reviewer again recognizes the value and significance of Dr. Getchell's dissertation.

Goines, Leonard. Music and Music Education in Predominantly Negro Colleges and Universities Offering a Four-Year Program of Music Study Terminating in a Degree.* University of Kansas, 1961

Reviewed by **Henry L. Cady**

One of the functions of the historian is to remind the present that changes have occurred. The Goines' study clearly establishes that the quality and even the nature of education as a whole and music education in particular have changed within the Negro colleges and universities. The purposes of the study were to:

1. Study the historical development of music education in Negro colleges and universities.

2. Determine the scope of music and music education now in effect in predominantly Negro colleges and universities.

3. Study discernible trends in an effort to determine whether the prevailing conditions indicate a proper development in view of what music and music education should be in Negro colleges and universities.

The procedures of the study included three techniques--document analysis, questionnaire survey, and interviews. The documents analyzed were articles and books about Negro colleges and universities including yearbooks, histories,

*Columbia University, 1963, order number 64-1476, microfilm $3.75, xerox $13.30

encyclopedias, and journals; the catalogs and bulletins of all of the institutions included in the study; previous research; and the professional literature on teacher education and music in education. The questionnaire requested information about objectives for the music department; policies concerning faculty salaries, tenure, and retirement; quality of faculty preparation, experience, efficiency, and professional activities; private music study of students; enrollment statistics according to degree and demographic factors; departmental budget and adequacy of departmental programs; and facilities and equipment. Ten of the responding institutions were selected in terms of their differences for interviews as a means for validating the questionnaire responses as well as obtaining additional information. The persons interviewed included administrators, faculty, students, and laymen from the surrounding community.

In a separate procedural section, Chapter IV, Goines reviews the "criteria for the preparation of professional personnel in music and music education." These "criteria" are a description of various sources and ideas from which one may obtain projections of what individuals and organizations consider to be an appropriate status and educational process for music education. The criteria Goines' discusses are not objectively validated schedules of items on which the quality and quantity of programs can be compared. Some of these are philosophical projections of Broudy, MacMurray, the Harvard Report and the NEA. Others are the projections of accreditation agencies such as NASM, NCATE and the AACTE as well as the six regional accreditation agencies. Also listed as a criterion of quality is the support of foundations such as the Carnegie Foundation, Russell Sage Foundation, involvement of governmental agencies, influence of federal and state laws, and teacher certification requirements. Under the heading of "current standards," Goines cites the study by McGrath and Wager and the professional skills and competencies approved by the NASM and the MENC. These are all supplemented by undocumented recommendations concerning staff, student personnel services, facilities and equipment, and professional laboratory experiences.

The population selected for the study was initially all "institutions attended predominantly by Negroes which offer a four-year degree program with a major in music." Of these 106 Negro colleges and universities, 60 met this requirement and were sent the questionnaire. Forty-four (73 percent) responded including liberal arts colleges and universities; teachers colleges; agricultural technical, mechanical and industrial colleges and universities; land-grant colleges and universities; and state colleges and universities. The ten institutions which were visited included members and nonmembers of NASM, large universities, small church related and independent colleges, large private universities, small state colleges and large land-grant institutions.

The findings of Goines' study are presented in two sections. Those for his first purpose, the historical background of the Negro institutions, are presented in Chapters II and III. This is followed by the presentation of his evaluative criteria in Chapter IV. The remainder of the findings from his analysis of the institutions are presented in Chapters V, VI, and

VII. Chapter VIII presents Goines' interpretation of the changes in Negro higher education in terms of philosophy and practical applications over 22 years. In addition to this, the chapter including some procedures, i.e., Chapter I, contains much descriptive material concerning these institutions which relates to the findings in these latter three chapters.

The historical findings about Negro education and the place of music in it is sketched by Goines in such a way that a coherent, developmental process is difficult to discern. It seems that there have been four periods in the history of this aspect of higher education: (1) from the founding of the first Negro college at Wilberforce, Ohio, in 1856 to the Morrill Act in 1862 or the Civil War date of 1865, (2) from 1862 or 1865 to the second Morrill Act in 1890 which specifically provided support for Negro institutions, (3) from 1890 to the first United States Office of Education Survey of Negro Education in 1917, and (4) from 1917 to the present time. Two basic philosophies have predominated which are akin to the general debate between the Rationalists and Instrumentalists in higher education, namely the "Classical" education advocated by W. E. B. Dubois and the "Industrial" education advocated by Booker T. Washington. It seems that by force of the student's nature and background, "Industrial" education and a general level of high school education has prevailed in these schools until the 1920's. If it were not for the active interest and aid of 12 religious denominations and the Freedmen's Aid Society, it is doubtful that Negro colleges of any kind or purpose would have been founded. It is evident that the present federal assistance program is building on a firm foundation laid by these churches. Musically, the impact of the successful fund-raising by the Fiske Jubilee singers abetted the functional, nonmusical role of music in the public relations programs of these institutions and in their nonacademic aspects of student life. Only relatively recently have music degree programs been given a place in the academic program until almost two-thirds produce professional musicians at the present time. The first degree program was begun in 1919 and was intended to produce performers. Goines states that the extant 60 music major programs now include music teacher education as a primary endeavor.

The findings from the analysis of the 44 institutions are reported under three topics: (1) institutional resources for professional preparation in music and music education...., (2) departmental resources for professional preparation in music and music education...., and (3) faculty and facilities. Of the 60 institutions in the study, 56 were accredited regionally and, in addition, eight of these were approved by NCATE. Five others were approved by both NCATE and the NASM. Among the 60 institutions, 36 offered the Bachelor of Science degree, 21 the Bachelor of Arts degree, and 3 the Bachelor of Music. At the graduate level, six of the 60 institutions offered the Master of Arts degree and two offered the Master of Music degree. As have other investigators, Goines could find no difference between degree requirements and the type of degree offered. The control of 31 institutions was by private or church organizations and 29 were state controlled. These were financed accordingly. Student Personnel programs Goines considered to be of extraordinary importance because of the extreme variations in the socioeconomic backgrounds of the students. This aspect of the institutional resources was considered adequate.

The departmental resources included objectives of an avocational and vocational scope. Regrettably, they were vague and lacked definitness. Teacher education was considered the most important objective by the 44 respondents to the questionnaire and only 27 placed the education of professional performers as their secondary objective. Typically, general education occurred in the first two years and the curricular structure was divided as follows: general education 37 percent, general professional education 12 percent, music education seven percent, music 39 percent and electives five percent.

The analysis of the faculty and facilities revealed that there were no doctorates held by members of the first two ranks of the faculty. In music education, there were 40 doctorates, 203 masters, and 55 with no advanced degree. Graduate and undergraduate education was received by the faculty in music education at predominantly white universities and colleges. Concerning physical facilities, the respondents indicated these to be most inadequate and their improvement a very great need.

The preceding summary has indicated that the Goines study contains deficiencies. One of these was the organization of the report which seemed to this reviewer to be illogically conceived. Another deficiency is in the survey technique, which fails to provide a context and meaningful contrasts. For example, one wishes that the typical curricular balance of non-Negro institutions had been used as a basis for comparison. After reading the report of the survey, there still remains a question in the reader's mind about the quality of the Negro institutions.

The evaluative criteria Goines uses in his analysis of the 60 institutions which have four-year music degree programs raise some interesting questions for this reviewer. What are the criteria for academic excellence in music major programs? Are the curricula recommended by the NASM valid? What validity is there in the curricula and competencies recommended by NCATE and AACTE? These seem to be the best and generally accepted standards, but it is not to the credit of the music profession that validated concepts and even validated instruments were not available to Goines.

To the general scholar, perhaps the most interesting and useful portion of the study is the historical account of the evolution of higher education for the Negro. There is much in it that is relevant to the social problems of the Negro today. Goines' brief sketch indicates that a thorough scholarly search in this topic would be more than interesting and fruitful to the sociologist in education and music.

A STUDY TO DETERMINE THE EFFECTS OF TRAINING AND PRACTICE ON DRAKE MUSICAL APTITUDE TEST SCORES* University of Iowa, 1958

Edwin Gordon

Reviewed by Roger P. Phelps

There are those, no doubt, who question the rationale for reviewing a doctoral study which was completed ten years ago when so many more recent ones remain yet to be examined. A revival of interest in the music testing movement, partially due to the necessity for evaluating federally financed programs, the appearance this year of a new textbook[1] on the subject, and the publication of at least four new music tests within the past three years all bear witness that such a review is not entirely unjustified. One of the recently published tests is by the author of the research study which is reviewed here.[2]

It was the purpose of this study to ascertain whether or not intensive training will enable an individual to improve scores he initially received on a valid musical aptitude test. Because training might influence the initial scores obtained on the Drake Musical Aptitude Tests, another objective of the research was to determine whether this instrument might possibly be a measure of achievement rather than of aptitude.

Gordon's hypothesis was twofold: (1) scores on the Drake Musical Aptitude Tests will show significant improvement with training and practice, and (2) students who initially score high on the Drake Musical Aptitude Tests will subsequently lose their advantage over those who initially score low.

Forms A and B of the Drake Musical Aptitude Tests were administered by Gordon to sixty-five students at University High School of the University of Iowa. The reader will recall that the Drake measures consist of two forms each for the musical memory and rhythm sections, thus constituting a battery of four tests. The musical memory forms are equivalent; those for rhythm are not. Twenty 9th grade students classified as nonmusical, which according to Drake's definition means less than five years of musical training, were chosen to participate in the experiment. Ten of those students involved in the research study achieved rankings of from 50 to 75 percent on the musical memory pretest of the Drake Musical Aptitude Tests. The other ten ranked from 1 to 36 percent. Randomly assigned to the experimental group were five individuals from the high and five from the low scoring categories. The control group constituted the remaining ten students. Noting that it was of no particular significance, Gordon stated (p. 20): "By chance, no girls were assigned to the experimental group but the control group included five girls and five boys." Because the forms are not equivalent, the groups were not equated on the rhythm test.

The experimental group received twenty 1/2 hour periods of instruction. No training was given to the control group nor were they aware of their participation in the experiment.

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*Order number 58-2959, film $2.00, xerox $4.60.

[1] Paul R. Lehman, Tests and Measurements in Music. (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968).

[2] Edwin Gordon, Musical Aptitude Profile. (Boston: Houghton Mifflin Co., 1965).

A Study to Determine the Effects of Training and Practice

Gordon presented on the piano short melodic fragments which he had composed for use with the experimental group in seventeen of the twenty instructional periods. They were similar but not identical to those found in the musical memory section of the Drake battery. The subjects were given suggestions relative to what changes in phrases they should listen for. Three instructional periods were devoted to rhythm, using a mechanical and an electrical metronome. Both metronomes were synchronized but only the flash of the electrical metronome remained visible to the researcher as the subjects silently counted the imagined clicks of the mechanical metronome after it had been stopped. Motivation of the experimental group was achieved by offering various kinds of rewards.

One month after the training had begun the posttest, consisting of Forms A and B of the Drake battery, was administered to both the experimental and control groups. A two-factor analysis of covariance technique was used to obtain a precise determination of the effects of practice and training. The factors considered were the training variable and the initial level of performance. This technique makes it relatively easy to make provision for statistical regression, which means that there is a tendency for extreme scores (both high and low) to regress toward the mean on a retest.

Gordon was unable to accept his initial hypothesis at the 5 percent level of confidence in regard to the effects of training and practice on the musical memory test as evidenced by the data presented in Table IX (p. 36):

TABLE IX
Adjusted Means For The Musical Memory Posttest Scores

	Experimental Group	Control Group	Difference
High	48.48*	54.83	6.35
Low	55.89	58.19	2.30
Total	52.19	56.51	4.32

*According to Drake's method of computation, a lower score is actually better than a higher one because it indicates incorrect rather than correct responses.

His second hypothesis, that initially high scores will lose their advantage over initially low scores on retest was rejected at the 5 percent level of confidence for the musical memory test because on the analysis of covariance the F ratio for the treatments was 0.91.

In comparing the results of the rhythm test, the initial hypothesis was accepted at the 5 percent level of confidence as evidenced from Table XI (p. 39):

TABLE XI
Adjusted Means for the Rhythm Posttest Scores

	Experimental Group	Control Group	Difference
High	57.88	72.93	15.05
Low	100.55	81.03	-19.52**
Total	79.22	76.98	- 2.24**

**Minus indicates loss of points for the experimental group.

The second hypothesis, however, was rejected at the 5 percent level of confidence for the rhythm test as noted by an F ratio for treatments of 0.78 for the analysis of covariance.

A correlation also was made between scores on the musical memory and rhythm tests of the Drake battery using the pretest scores of the original group of sixty-five students. The resultant correlation was .315, which, according to Gordon, "is in keeping with Drake's correlation coefficients." (p. 41).

Conclusions reached by Gordon include: (1) scores on the Drake Musical Aptitude Tests cannot be improved significantly with training and practice, (2) no consistent pattern is evident in regard to the benefits of training on either the initially high or low scoring groups, (3) the Drake Musical Aptitude Tests are valid measures of aptitude rather than of achievement as suggested in the formulation of the problem, (4) although the positive correlation of .315 between the musical memory and rhythm sections of the Drake battery is low, it is evidence that two separate factors of musical aptitude are involved, and (5) much of the scientific research which has been done relating to the nature and measurement of musical aptitude is unreliable.

CRITIQUE

Music educators in the past--and the present--tended to veer away from research topics which suggested a design employing experimental techniques. This is unfortunate because the experimental method is one of the best for obtaining objective data. Gordon's research design is excellent and worthy of scrutiny by anyone interested in research in music testing. With respect to research concepts employed, how many music educators were familiar enough with the technique of covariance analysis ten years ago to use it comfortably?

Perhaps the only real weakness of this research study is the very limited number of subjects--ten each in the experimental and control groups--from which the data were derived, an inadequacy recognized by the researcher himself. The validation of Gordon's excellent Musical Aptitude Profile[3] bears witness that this deficiency has been corrected in subsequent research. A reader who has not developed much expertise in perusing research reports may experience some difficulty in separating Gordon's conclusions from his recommendations, but perhaps this is a matter of stylistic format rather than a research weakness.

It is refreshing to observe that an experimental research study of the quality of this one was completed at a time when many music educators felt that the ultimate in music education research represented a project persued by the descriptive method.

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[3] Ibid.

Gray, Thomas Leighton. An Investigation of the Changes in Teaching Concepts of Student Teachers of Music. State University of Iowa, 1962.

Reviewed by Gaylord H. Farwell

Introduction

Most people engaged in the training of prospective teachers agree that student teaching is a valuable part of the teacher education program. Conant made the supervised student teaching experience a cornerstone of his recommendations in his The Education of American Teachers. This study was concerned with answering certain questions concerning the student teaching experience and had as a secondary problem, the exploration of a particular research technique and its applicability to research problems in music education. The need for research in student teaching in music education and the applicability of the technique utilized in this study was established through a rather thorough review of the literature.

The Problem

This study was designed to answer three basic questions:

1. Is there a change in the teaching concepts of student teachers of music during student teaching?
2. Are such changes in high rated student teachers different than in those rated low?
3. During the student teaching period, do the teaching concepts of student teachers become more like those of effective music teachers?

Limitations

The subjects of the study were 24 student teachers in music enrolled at one institution. They were not selected on the basis of random sampling procedures but were believed to be a fairly typical sample of student teachers in many large state universities in the Midwest.

Only those effective music teachers were chosen for this study whom the panel of judges knew to be highly effective in the public schools.

Procedure

On the basis of a review of the literature, it was decided that the Q-sort technique was being widely used in other areas of educational and psychological research and might be appropriate for studies in music education. Q-technique was designed to carry out research studies with small groups of subjects. Rather than giving a small number of tasks or items to large numbers of subjects, a large number of tasks are given to a small number of subjects. Scores are then assigned to items rather than the individuals performing the tasks. Correlation coefficients can be computed by comparing the scores between two or more arrays of test items.

In this study, a measuring instrument was constructed based on the characteristics of effective music teachers as identified by the subjects. Content validity was assured by using only those characteristics mentioned by music education authorities and whether the characteristic described observable behavior. A jury of faculty members judged the clarity of the items and an instrument of 42 items was finally constructed for use. Reliability of the instrument was determined by test-retest method using a control group of 17 music education majors.

For the first phase of the study, the developed instrument pertaining to the characteristics of music teachers was administered. The subjects were asked to arrange the 42 characteristics in a forced normal distribution according to how frequently the statements described them. Next they were asked to arrange the statements according to how well they described an "ideal" music teacher.

A group of 27 effective music teachers selected by a panel of five faculty members was asked to arrange the 42 items in the instrument according to how they described them and an "ideal" music teacher.

At the end of the fourteenth week of student teaching, the above procedure was repeated with the subjects.

Conclusions

In terms of the stated purposes of this investigation, the following conclusions may be drawn:

> The teaching concepts of the music student teachers in this study did change during the period of student teaching. The teaching concepts of the music student teachers who were rated high were different from those of the low-rated group. Furthermore, the high-rated students' self-descriptions changed, on an average, significantly more in the direction of effective teachers than did those of the low-rated student teachers.
>
> During a period of student teaching, the teaching concepts of all subjects in this study generally became more similar to effective music teachers.
>
> In evaluating the use of Q-technique for music teacher education research, it was concluded that this technique offers distinct possibilities for measuring outcomes that have previously been given little attention.

Recommendations for Further Research

Researchers might explore such matters as changes in student attitudes, appreciations, and ideas as a result of a course of music study. Q-technique might be used as an evaluative and instructional device by having students describe musical or teaching situations and then comparing their observations with those of acknowledged experts. Factor analysis studies of music students and teachers could be conducted through the use of Q-technique.

Comments

This study should be of interest for those concerned with teacher education and the value of the student teaching experience. The author has shown that the Q-technique is a practical and useful tool for research in music education and this seems to be the greatest contribution of the study. The study could be rather easily replicated and thus meets one of the criteria of meaningful research.

Although the researcher acknowledged the limitations, this reviewer felt the study would have been much improved with more adequate sampling techniques utilized in selecting both subjects and effective teachers. There seemed to be unnecessary possibility for contamination of the results when a large number of the "effective" teachers were graduates of the same training program under the same faculty as the subjects.

The completed instrument used in this study was somewhat disturbing in content; not in mechanical respects. The literature in music education during the past ten years has expressed concern over the total music education program and especially the contributions of the music education program to the total general education curriculum of the public schools. Bennett Reimer contributed a significant statement in this regard in Bulletin No. 4, Winter, 1965, of the Council for Research in Music Education.

The measuring instrument developed for this study seemed to place most of its emphasis on outward characteristics of music teachers and their work with performing groups. No description was furnished of what constitutes effective teaching in an effective total program of music education. It seems to this reviewer that the "effective" music educator is concerned with a developmental, comprehensive program of music education for all students in which the performing groups play a significant role. The possibility exists that I have a faulty perception of the measuring instrument. The researcher did not furnish a behavioristic description of an "effective" music teacher as selected by his panel of experts.

Dr. Gray is to be complimented for exploring the application of the Q-technique to problems in music education. This technique would seem to have rather wide applicability.

Groff, Frank H. Effect on Academic Achievement of Excusing Elementary School Pupils from Classes to Study Instrumental Music. Reviewed by Jack Pruitt. University of Connecticut, 1963.

Introduction

The prevailing practice in the majority of the public schools of our nation is to excuse elementary pupils from their classroom work in order to study instrumental music. The number of times a pupil is excused weekly and the length of time for which he is excused varies from system to system.

As a result of this practice, there are teachers who feel that the pupil suffers academically because of being absent from the classroom. Parents also are inclined to want their child to drop instrumental music when grades in other subjects are not as good as they, the parents, feel they should be. Finally, there are others who have not accepted music education as an integral part of the curriculum. These people find it inexcusable that a pupil absent himself from the classroom for musical training of any kind.

While Groff is one among many concerned with this problem, it appears that he is the first, or among the first, to attempt to disprove the accusations of teachers, parents, and others.

The Problem

The purpose of the investigator's study was to determine the extent, if any, to which a pupil's academic achievement was affected by being excused from his classroom work to participate in the instrumental program.

The need for the study was justified in terms of the investigator's own concern over the problem in the school district in which he was employed. Also included in the first chapter are the scope of the study, definitions, the design for the experiment, a pilot study design, follow-up project, and summary.

Chapter II, entitled "Related Research," reports the findings of research and writings concerned with showing the relationships between musical ability and intelligence. A second section reports findings which show "the effects of music on other kinds of achievement." The investigator was unable to find any prior research which paralleled his study. This chapter is concluded with a summary.

The historical development and present status of the instrumental music program in the West Hartford, Connecticut, public schools is reported in Chapter III. The writer touches briefly on the very early beginnings of musical activity and proceeds to a section on the development of music education programs in the United States. This chapter concludes with a report on the development of music education in the West Hartford public school system.

Chapter IV is entitled "Characteristics of the Groups," and discusses the method of equating two groups of 230 sixth-grade pupils each on the basis of (1) sex, (2) intelligence quotients, and (3) "according to the classroom teachers they worked with." Students participating in the instrumental program were designated "I" while students not participating in the instrumental program were designated "NI."

An equal number of "I" pupils and "NI" pupils were selected from the classes of 27 teachers, while ten teachers supplied an unequal number of "I" and "NI" pupils. For example, teacher number five supplied eight "I" and eight "NI" pupils and teacher 18 supplied 16 "I" and eight "NI" pupils.

The "I" group included 142 boys and 88 girls, and the "NI" group included 136 boys and 94 girls.

The two groups were equated as to mental ability through the use of the Henmon-Nelson Tests of Mental Ability. Intelligence quotient groupings ranged from 83-87 to 148-152.

The number of pupils in each of IQ ranges for "I" and "NI" groups was in no case the same. For example, the IQ range of 118-122 includes 40 "I" pupils and 49 "NI" pupils. The mean IQ for both groups was 117.5. The range of IQ for the "I" group was 85 to 144 and for the "NI" group, 89 to 150. The standard deviation for the "I" group was 11.2 and for the "NI" group 9.8. The median IQ for the "I" group was 118.4 and for the "NI" group 118.2.

Procedures used to measure the academic achievement of both groups are reported in Chapter V. A frequency distribution was made of the composite percentiles from the scores of both groups on the Iowa Tests of Basic Skills given the following fall. The mean, standard deviation, and standard error were found for each group. These data were analyzed (Z test) to determine if the differences observed in the scores of "I" and "NI" on the Iowa Tests of Basic Skills were statistically significant.

Chapter VI reports a summary and conclusions. After a restatement of the problem, its importance, and procedures used, it was concluded, since no statistically significant difference was found between the scores of "I" and "NI" pupils on the Iowa Tests, that the academic achievement of the pupils in the instrumental program was not affected by being out of the classroom for these lessons.

A section suggesting possibilities for further research concludes the study.

Comments

Pupils were equated on the basis of sex, IQ (Henmon-Nelson Test of Mental Ability), and "criteria of classroom teacher." One does not question equating by sex. The Henmon-Nelson Test is accepted as being both reliable and valid for predicting success in academic subjects. However, at no place in the study are found the criteria used for equating "I" and "NI" pupils. Were these criteria the same for all teachers? Did they differ? Certainly more information should have been included relative to these criteria.

Statements regarding the time per week pupils included in the study were excused to take band are inconsistent. "Pupils have been excused once each week for approximately 30 minutes from whichever subjects were being taught at the time." (Page 32) "...to see if a significant difference in academic achievement had occurred in the group of pupils who had been excused weekly or bi-weekly from class to take instrumental music...." (Page 55)

It is assumed by the reviewer that, in most school districts, classroom teachers are requested and do arrange their daily schedules so that instrumental students are not penalized for being out of the room, i.e., the pupil does not miss crucial presentations, tests, etc. Some teachers may be in accord with the pupil being out of the room while others may be sympathetic. No mention is made of this.

The preceding thoughts, among others, tend to make the study weak and the results questionable.

Finally, a study concerning academic achievement of pupils excused from class to study instrumental music in contrast to those not excused from class could make a contribution to music education. Unfortunately, Groff's study appears to have too many weaknesses in every section to present a contribution to music education.

MUSIC CURRICULUM DEVELOPMENT IN THE TWO-YEAR PUBLIC JUNIOR COLLEGES OF CALIFORNIA* Boston University, 1965

Clifford E. Hansen

Reviewed by HARVEY E. MAIER

The primary purpose of this study consists of a presentation of the factors necessary to an understanding of music curriculums in California public colleges. Chapter II reviews related literature; Chapter III traces the historical development of the junior college, and Chapters IV and V present an analysis and description of the educational functions of the junior college. Chapter VI considers factors and procedures involved in the development of the junior college; VII concerns data gathered from a questionnaire sent to junior college department chairmen and VIII is the summary with conclusions and recommendations for further study.

The writer structures in straightforward language the junior college concept as differing from the community college idea. The latter is defined as an institution which provides for as many educational, cultural, and vocational requirements of its students as needed in a community and as is practical, while the first concerns itself more with post-graduate high school youth and the transfer program.

The writer cites California laws which denote the five educational functions the junior college may serve: (1) the transfer function, (2) the terminal function, (3) the counseling and guidance function, (4) the general education function, and (5) the community function. Each institution may select the functions which most nearly meet its educational needs. The music department must parallel its objectives with those of the college-community.

The purposes of this study were: (1) to identify the purposes and objectives of junior college music curriculums, (2) to determine procedures employed for curriculum appraisal and development, (3) to discover factors affecting music curriculum appraisal and development, (4) to analyze music course offerings in terms of junior college functions, and (5) to ascertain goals established by music departments for curriculum development.

The importance of the study centers around: (1) curriculum appraisal and construction, (2) studies of curriculums in the field, and (3) students who will enroll in the junior college program. Here, the author states that of approximately seventy percent of the students who announce their intention to complete a two-year transfer program. . .only 30 percent do. Seventy percent of the freshmen enrolling in junior colleges are terminal students. However, some of these students may find room in a senior college after a year or two out of school. Thus, the program of the junior college would be a transfer curriculum fulfilling a need within the community.

Hansen gives an excellent history of the development of the junior college from William Rainey Harper to the present. This historical survey is then followed by tracing the growth of California's junior colleges through the State's developmental laws. From the posthigh school education provision of 1907 and the first postgraduate course at Fresno High School in 1910 to the Strayer Report and the Master Plan for Higher Education, the growth and importance of the junior college movement is delineated. The final part of this chapter concerns the development of music in the junior colleges by means of collating the findings of the several leading educators who determined their results through the use of college catalogs.

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* Xerox $16.05.

College catalogs are fallible, however, in that some classes listed are rarely, if ever, taught because of lack of student need or interest. Yet, in defense of the proposition, there is no other way to arrive at a picture of the development of music except through "catalogic" technique, and a certain indication of interest is implied when courses are printed in the catalog.

The educational functions of the junior college were stated in 1948 by a Liaison Committee of Regents of the University of California along with the State Department of Education. Since this was essential to the report, a brief summary is given:

1. The junior college is committed to the democratic way of life.
2. The junior college recognizes the individual man as the highest value of the world and the universe.
3. The junior college is committed to the policy of granting to the individual man the maximum amount of freedom.
4. The junior college is committed to the policy of providing for all the children of all the people posthigh school education.

The six specific objectives are:

1. Terminal Education.
2. General Education.
3. Orientation and Guidance.
4. Lower Division Training.
5. Adult Education.
6. Removal of Matriculation Deficiencies.

The junior college has democratized higher education, says Hansen, through non-selectivity of admissions, low tuition, and accessability socially and geographically. Each high school student is to be accepted on his own level of development and taught from that point, with the expectancy that he will attain the educational objective that will be meaningful to him.

The five functions used by the author: transfer, terminal, counseling and guidance, general education, and community are defined. The definition of these functions logically leads the author to evaluate the role of music in the light of the educational functions. The writer justly notes the lack of definitive criteria due to the paucity of literature on the subject.

Transfer students are comparatively few in number, yet, in music, take up so much of the instructor's time that insufficient attention is given to reaching the remainder of the student body in terms of music participation and appreciation.

Music Curriculum Development

Mr. Hansen refers to Howard Talley's suggestion that a program to care for all students be developed in terms of outcomes rather than course equivalents. An entrance examination at the four-year institution would place the student in the correct educational environment. This approach would enable the junior colleges to develop their music program with greater freedom suited more nearly to the needs of the particular school.[1]

With the junior college "terminal" for 70-75 percent of all enrollees, how can the music department meet student needs? Several problems are noted in this paper: (1) Lack of agreement among music educators as to its exact benefits, procedures, and organization. (2) Lack of definition of terminal education in music. (3) The consideration of the junior college as preparatory to entering the conservatory.

Careers in music that would profit from a two-year background in music are: workers in music stores, makers and sellers of musical instruments, professional musicians of local radio station variety, arrangers and members of dance bands, music critics on average size newspapers, church choir directors, and organists in moderate sized congregations, music therapists, instrumental repairmen, and piano technicians.

Guidance in music is done after the student has enrolled. What courses to take, whether to continue in music, and which college to attend are some of the areas considered. The music department of the junior college must take every student at his level and challenge him to progress as far as his interest and ability leads. The senior college, however, can be more selective. Courses are needed in the junior college to accommodate students of varying levels of ability including adults who are becoming a larger proportion of the student body each year.

Music in general education is basically a cultural subject. The author devoted too many pages of quotations to this area in the opinion of this reviewer. A summation of his findings with an occasional quote would have been preferred.

The last of the educational functions, community service, is defined as "activities above and beyond the regular curriculum which make the college the educational and cultural center of the community." Besides being taught the skills to earn a living, students must also be taught to live intelligently. Kaplan gives the following recommendations for the music department of the community college: Know the community in order to meet its needs, use jazz if it helps, study the church music of the community, study the folk music of the region, call upon ethnic groups within the community as resource persons, and constantly evaluate your school music program.[2] Other types of total community involvement mentioned are family concerts, community music festivals, fine arts festivals, annual pageants, and music week as well as symphony concerts, opera, ballet, modern dance, chamber music, and so forth.

Music for the adult meets a challenge in the question, "what is music education and what is recreation?" If the program reflects cultural and social characteristics, it is said to be of educational value. Suggested types of opportunities that meet this definition are community orchestras, community bands, community choruses, barbershop quartets, community sings, leadership and conducting, applied music, and music appreciation. Major limiting factors to developing an adequate community music program are funds, staff, housing, and equipment.

The tenet expressed in the final chapter is that the music program should emerge from the purposes of the institution. The author says there are basically three types of students. (1) those who create, (2) those who perform or do, and (3) those who consume. The suggested procedure is to accumulate facts about the needs of the student, community, and school, then build the program which most clearly satisfies those needs. Follow-up studies in all areas would determine the effectiveness of the program. The key word is service.

The questionnaire was most informative concerning the status of music in the junior colleges of California. However, no conclusions were drawn by the author.

In his recommendations for further study, Hansen suggests that the junior college should accumulate a body of facts about its students: vocational plans, life purposes, education interests, academic aptitude, age, sex, and other related factors. Follow-up studies should be made of transfer students, terminal students (those who did and those who did not complete the course of study), and adults in the community to see if their needs were being met.

There is a need for an historical study of music in the junior college pertaining to the development of music programs or evaluation of purposes and objectives of music within junior colleges. Other studies would include: (1) the application of the philosophy of terminal education to music, (2) the development of two-year programs in music, (3) the benefits of being accredited by the National Association of Schools of Music, and (4) the extent to which utilization is made of the junior college philosophy by music departments.

This is a well-written dissertation with a wealth of quotes and materials from numerous sources as its greatest strength. Perhaps, this extensive series of quotes is also its greatest weakness. The researcher could have summarized his findings in his own words with an occasional quote to strengthen the premise thereby making the treatise more compact and cogent for the reader. The author thoroughly covers his topic without giving any conclusions of his own. Permitting the reader to come to his own conclusions has value, but one would occasionally like to know what the author thinks. The questionnaire results are in some instances interpreted rather liberally. On page 243 he states in the fourth conclusion: "Goals for curriculum planning correspond to acknowledged purposes and objectives of music departments," while on page 245 in conclusion fourteen we find that "Most California junior college music departments do not employ a statement or philosophy, aims, or objectives as a guide for curriculum appraisal and development."

The bibliography is perhaps the most complete compilation of references relating to general music and the junior college, both published and unpublished, this reviewer has seen.

Music Curriculum Development

Mr. Hansen should be complimented on the results of his research in an area that needs his findings. He points up succinctly the need for greater attention in music to the non-performer. It would be a feather in the cap of the junior college should this educational institution be the first to solve the problem of community music for all people which plagues the curriculum planners in junior high, senior high, junior college, and the universities at the present time.

REFERENCES

1. Howard Talley, "The Relation of the Junior College to the University," Yearbook of the Music Educators National Conference (31st), 1938 (Chicago: Music Educators National Conference, 1938, pp. 140-141.
2. Max Kaplan, "Music for Community or Catalog?" Junior College Journal, 16:24-26, September, 1945, pp. 24-26.

Hansen, Louis Andrew. A Study of the Ability of Musicians to Detect Melodic and Harmonic Errors in the Performance of Choral Music While Inspecting the Score. University of Kansas, 1954.

Reviewed by Charles G. Taylor

The ability to read and hear music accurately is important for musicians. Such ability has special significance for those who train and direct musical groups. This study was particularly concerned with the ability of musicians to read and hear the melodic and harmonic intervals and chords, as important elements of music, because the music director must be continually concerned with having the notes performed as written.

The skilled musician can imagine the sound of the musical symbols. Agnew[1] found that musicians always reported the use of auditory imagery and more than half of the musicians who served as subjects attested that auditory imagery could be as vivid as actual tonal perception.

From the results of a study of this type, involving a test of the ability to detect errors in a performance, may be inferred the contributions of theory training to skill in reading and hearing music.

This study was undertaken to investigate the score reading ability of musicians, conducted among musicians either preparing for or already active in a musical career, namely, undergraduate and graduate music majors in colleges and universities. It was confined to the choral medium for the following reasons: 1) it is probable that every musician has had some experience in choral singing, since the voice is a natural instrument; 2) the vocal medium is used to a great extent in many phases of theory training; 3) in a choral situation it is likely that the singers create more mistakes in tones and harmonies than does the pianist; 5) a prime consideration would be to create a rehearsal situation.

None of the available commercial tests of musical achievement, musical aptitude, musical sensitivity or feeling, etc., was considered suitable for this kind of measurement.

A test was constructed in which a recording of a phrase or passage was used for comparison against the printed score. Discrepancies were inserted in the recorded version. The tested person was to mark chords in which errors occurred.

Music for the test was selected subject to the following considerations: its availability for, and likelihood of general use: the predominance of diatonic content; the predominance of 3 and 4 parts. It was considered advisable to let the listener hear each passage twice.

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[1] Agnew, Marie, "A Comparison of the Auditory Images of Musicians, Psychologists, and Children." Psychological Monographs, 31, 1 (1922).

For the purpose of developing and testing individual items, the test was constructed and given to ten musicians of varying degrees of training and experience in an exploratory form. From this, items were selected for a preliminary test, which was given to 36 musicians, representative of undergraduate and graduate students for which the final form of the test was intended. To determine the reliability of this test, the split-half method was used, since neither the retest method nor equivalent forms method were possible.

The preliminary test was given a second time, since the first test revealed a need for easier items. From this and the first form of the preliminary test a final test was constructed.

The final form contained thirty musical excerpts with 118 errors in performance. The tape ran 36 minutes, leaving the remainder of the normal 50-minute college class period for administration and completion of a personal questionnaire. The score was reproduced by the photo-offset method, from printed music, with small boxes inserted beneath the bass staff under each note or chord. The person being tested was to check each box when the performance of that note or chord did not agree with the printed score. The tape recording was made with one singer on a voice part, and several recordings were made of each passage, with the best "take" incorporated into the master tape.

The questionnaire accompanying the test asked for the following information: age, sex, school level; amount of music theory instruction; number of years of piano, voice, or instrumental study and experience; choral and instrumental directing experience; estimate of piano playing ability (as related to reading hymns); estimate to piano improvising ability; and most recent school marks in music theory courses common to the first two years of a college music curriculum.

A criterion group, selected because they occupied advanced position of musical responsibility or had achieved superior musical results, was contacted and 25 responded and took part in the study.

Twenty music departments in colleges and universities were contacted. Eighteen expressed interest in the study, but only ten were able to take time to administer the test. Eight completed the administration of the test and returned the materials. (These schools are kept anonymous in the study.)

Results and interpretations of the test, based on 260 individuals tested in the cooperating colleges and universities, showed the following results.

1) One or two years of theory training made a significant difference in achievement, but training beyond two years made little difference.

2) Class marks in ear-training courses correlated most closely with achievement on the test. This finding substantiated the criticism of harmony courses in which emphasis is placed on the mechanical writing of harmonies divorced from actual musical values or other practical considerations.

3) Piano majors achieved significantly better than did instrumentalists, and possibly also better than the vocalists. For all tested, disregarding their principal performing medium, test scores improved as the number of years of experience on the piano increased. Piano sight reading skill appeared to be definitely associated with higher test achievement.

4) Age, sex, voice part usually sung in ensemble, and voice or instrumental study (other than piano), apparently had little or no effect on test results.

5) Method of listening to the test items was measured in a subjective way, by a statement from the person tested after the test was completed. Apparently those most successful on the test were those who listened for chord quality, as opposed to those who listened to one or two parts at a time.

Some few individuals with comparatively little academic music training scored as high on the test as the highest scoring members of the criterion group. The inference may be made that, as with so many other attributes of musicianship, ability in the aural-visual discrimination of tones and harmonies is associated with the natural endowments of the individual and that the ability is developed earlier in those individuals having the greatest amount of such endowments.

The results of the study lead to the following recommendations for music education programs on the college level:

1) Two years of theory training should be the minimum for music students who need to acquire some competence in score reading.

2) From the data on this study, at least six years experience on a keyboard instrument is recommended. Ability at the keyboard should be developed at least to the point where material such as hymn tunes and easy accompaniments can be played at sight, and possibly the ability to improvise at the piano should be developed to the point where accompaniments can be provided for simple melodies.

3) If it is desired that achievement in theory courses be measured in terms of functional skills acquired, the testing technique utilized in this study could be employed.

Some suggestions for further research, arising from the study, are offered as follows:

1) The provision of norms for this test, or a similar one.

2) Media other than choral (piano, organ, etc.) could be used for another study.

3) The procedure and technique employed could be used to measure skill in reading and hearing the rhythmic elements of music.

4) The effect of various tone qualities upon the perception of chord quality could be investigated. For instance, the same musical passage, containing introduced errors of performance, could be performed by voices, strings, woodwinds, brasses, or combinations of these.

Comments

The author of this study is to be commended for the design of the study in that he apparently succeeded in measuring what he set out to measure, i.e., the ability of musicians to detect aurally melodic and harmonic errors while inspecting the score. He made considerable effort to control the variables which might have been present in such a study. From a description of the recording techniques used, he had good tape equipment, and submitted the final tapes to a panel of experts for approval before the test was given. One of the important questions in the minds of those who have given recorded tests, such as the Seashore, Kwalwasser-Dykema, etc., is the worth of the test in terms of recorded sound. Mr. Hanson, according to his description of equipment and techniques used, probably had a tape of high fidelity for the use of the test administrators.

The basic question which can be raised about this dissertation concerns the recommendations and conclusions. In Chapter II ("Review of Related Research Literature") the author summarizes the available tests with the following statement:

> "Attempts to validate musical aptitude tests against the criteria of success in music studies and in music as a profession have been disappointing...The validity of the more recent tests as judged by external criteria has improved."

How is this study validated? Although he makes these criticisms of other tests, the author turns around and employs the same techniques to "validate" the data he has collected. The hypothesis was made that musicians rated as "above average" (called the criterion group in this study) would achieve significantly better on the test than would unselected musicians.

In the questionnaire section of the test, each person was asked to give his grade in the most recent music theory course he had taken. This was verified from official records in only one of the eight schools participating in the study. Yet, on this very questionable information, based on the memory of the persons tested rather than on official records, such conclusions are made as, "achievement in ear-training courses according to school marks corresponded significantly with test achievement, this providing additional proof of the validity of the test." Again, the criticism made of other tests, i.e., success in music studies, now becomes a criticism of this test.

Other questions asked of the subjects were the number of years of keyboard instruction, skill at sight-reading hymn tunes, and skill at improvising. With no further information than the answers to these questions, the following recommendation is made: "The data appeared to indicate that scores improved as the number of years of experience on the piano increased...at least six years study of a keyboard instrument is recommended." Progress and skill cannot be measured in terms of years of study. A more scientific investigation is desired on this item before recommendations can be made.

The conclusions drawn in this study are based on one contact with an individual, in a test administered within one 50-minute college period. From the standpoint of cooperation of several colleges, taking time in class to administer the test, perhaps this was a practical consideration. Obviously more detailed information about the individual was needed. For instance, student "A" says he has had five years of piano instruction--what does this mean?

A basic question which colleges and universities engaged in granting graduate degrees must answer is this: Is a research problem of enough merit so that we can assemble all the data necessary to reach valid conclusions, or must we confine our investigations to fifty minutes of one given year and hope the conclusions will have some bearing on the problem?

The reviewer feels that Mr. Hansen's problem merited more time and information than he had available

Hare, Robert Yates. The Pedagogical Principles of Music Appreciation.*
State University of Iowa, 1959

Reviewed by Robert E. Nye

Dr. Hare is concerned with improving the quality of teaching of the college music appreciation class. It has long been claimed that while the college teacher may know his subject matter he is frequently lacking in his knowledge of the learner and how he learns. He states, "Many college instructors of fine musical ability are often inadequately prepared to teach a course in the appreciation of music because of a lack of knowledge regarding the psychological principles of learning." Knowledge of how to teach is particularly crucial when the learner is a person who had had limited contact with music; the college teacher who succeeds in teaching a music appreciation class for the general college student cannot be one who believes the old saw, "All a teacher needs to knowis his subject matter." It is to the discredit of college teaching today that this myth is not only very much alive but is often a basic premise in both the selection of college teachers and in the subsequent attempts to teach by many of the persons thus selected. The learner thus suffers because of a lack of knowledge of teaching by persons presumably employed to teach. Dr. Hare assumes that the teacher possesses the necessary knowledge; he now seeks to find pedagogical principles to combine with this knowledge to promote competency in the teaching of the college music appreciation class.

Purpose of the study. The purpose of the study was to determine the basic factors of music appreciation and to discover how the findings might be utilized in the teaching of music appreciation on the college level. The two main problems were said to be (1) to determine the psychological principles for effecting teaching of the subject and (2) to discuss the most effective materials and methods of teaching. The study also attempted to answer the questions: How does an individual get appreciation experiences? What role do attitudes play in producing such experiences? What kinds of forms in music are conducive to producing favorable attitudes?

The study was limited to a historical survey of the emergence of the music appreciation course, to seeking the aesthetic conditions of music appreciation, to identifying the psychological principles necessary for effective teaching, and to applying these findings to materials and methods for teaching music appreciation. Dr. Hare writes, "If our vast audience is to become musically literate, attention must be focused upon the means necessary to educate students to become intelligent listeners capable of both enjoying and evaluating music." He perceives music appreciation to be "an educational course designed primarily for the purpose of cultivating in a student the ability to listen discriminately to serious music."

Procedures. The study claims to utilize two methods of research, "the historical method involved in the assembly of worthwhile data of theoreticians and various experimenters, and the descriptive method consisting of an analysis of the psychological and aesthetic conditions of music appreciation." It first reports a survey of the evolution of music appreciation as a social movement and a college course, then examines aesthetic theories and "psychological experiments conducted and conditions necessary for effective learning." This extensive introduction leads to a discussion of the problem of learning and teaching procedures, an application of selected findings by the writer to his teaching of college appreciation courses, and closes with conclusions and recommendations.

*Order number 59-1682, microfilm $2.00, xerox $7.00

A background for the problem is developed by a review of literature pertinent to the history of the music appreciation movement and the college classes of introductory nature that developed from it. Included among references to names such as Naegeli and Burney is one to John Curwen, whom the writer labels, "one of the great pioneers of the appreciation movement." However, although statements are made about Curwen's promotion of the tonic sol-fa sight-singing method, none clearly applicable to his stated contributions to music appreciation appears. Specific contributions of other figures mentioned in chronological order include those of Will Earhart, Peter Dykema, Mary Regal, Frances Clark, Thomas Surrette, and Daniel Gregory Mason. Walter Damrosch is not mentioned. William Schumann is quoted as criticizing today's appreciation courses for discouraging potential music lovers by being taught as music history courses "in which they are subjected to constant quizzing on dates and factual data" or as analysis courses in which they are "obliged to memorize what are purported to be rigid forms as the key to listening to music."

In an effort to answer the question "How can it be taught?" Dr. Hare reviews the literature on theories of aesthetic response. He found two diverging points of view in the nineteenth century, one that aesthetic response is basically sensual, a pleasurable sensation, and the other that the aesthetic values of music reside primarily in form. Other theories and allied research are presented to bring the reader to the present day. Schoen, Mursell, Seashore, Hevner, and Mueller are among these quoted. The writer then takes the position that is:

> a comewhat modified cultural-relativity theory based on basic psychological principles, that beauty is imposed upon a musical object by the subject with interaction between both factors. The strength of the appeal of the musical object is dependent upon the quality or qualities which it possesses for the listener. These qualities are imposed upon or withheld from the object as a judgment of values resulting from the past experiences of the listener. It becomes a recognized work of art only when a sufficient number of people establish its qualities as an artistic norm; hence the object then has significance as a cultural stimulus.

Dr. Hare recognizes that passage of time may result in one generation failing to admire what another did.

He next reviews the literature concerning the formation of musical taste but does not attempt to summarize the various theories and findings of experimenters at the close of the chapter. Following this he treats similarly the psychological response to music and again there is no summary.

Chapter six applies educational psychology to the music appreciation course and is the most important chapter in the development of the study. It is interesting that the word "educator" is used for the first time. Dr. Hare writes, "Much of the art of education has always consisted of the skillful control of the external situation in such ways as to guarantee perception by the learner." He emphasizes motivation as an important aspect of teaching, calling it "goal set" or "goal awareness." He states:

> A great deal of the artistry of teaching seems to center in the establishment of genuine interests and enthusiasm for goals set up. The most skillful instructors, of course, often contrive to have students "discover" these goals, although this turns out actually to involve clever strategy and suggestion on the part of the instructor. Too often, however, instructors of music appreciation classes reveal a tendency to concern themselves more with listening materials which appeal to their particular tastes rather than a careful consideration of the interests and attitudes of the student, including his disposition to seek instruction... Obviously, the problem is not merely one of timing and ordering the curriculum material, but it involves as well directing the listener's attention and activities so that he may arrive by more or less orderly steps, which he must nevertheless take for himself, at clearly-seen goals.

General objectives are presented: (1) cultivation of emotional and aesthetic responses; (2) comprehension of the structural principles and forms of music; (3) recognition of styles and knowledge of representative musical works. Discussions of interest, attitudes, attention, pleasantness and unpleasantness, repetition and familiarity, the role of familiarity, sources of listening enjoyment, and significant factors in musical listening lead in the same chapter to formulation of pedagogical procedures of presentation, in which certain basic principles are discussed as organizational concepts: the popular presentation (beginning with familiar music), the associational presentation (proceeding from the simple to the more complex), the chronological presentation, and the evolutionary presentation. Dr. Hare finds basic weaknesses in each of these except the evolutionary, which he explains is concerned with the study of musical form in a flexible evolutionary process from folk song through suite, sonata, and symphony.

> It can proceed chronologically or otherwise. The advantage of this system is that not only can it start with the known and work to the unknown music of any period, but also it can serve to acquaint the student with various styles. However, it should be stressed that analytical hearing should be considered as only one factor among others contributing to the comprehension of music; for without consideration of the emotional and aesthetic responses to music, there will probably be little appreciation on the part of the student. Moreover, a sense of temporal perspective must be established, for otherwise the student will find it difficult to connect musical events and place them in the proper social situation....

It should be borne in mind that the measure of success of any method used depends upon the interest aroused and the growth in appreciation of music by the student. Obviously the success of a method rests ultimately upon the instructor's skill in utilizing the psychological factors of learning.

Conclusions. It was claimed that the study revealed the following points:

1. Musical taste is a social phenomenon which may be subjected to examination in terms of established frames of reference within a society.

2. There are a number of stereotype factors which contribute to the conditioning of musical tastes in college students.

3. Awareness and understanding of the attitudes and sentiments of students are vital to effective teaching of music appreciation.

4. The principles of educational psychology, gestalt psychology, and the findings of educational research may well be applied to the specific problem of learning to listen in music appreciation.

In applying the findings to the collegiate teaching of music appreciation, the writer concluded:

1. A survey of the members of the class regarding their musical backgrounds, attitudes, and tastes is most helpful in planning an approach to the subject.

2. A student's dislike for or indifference to a musical work of some complexity is attributable to his inability to perceive form and his unfamiliarity with the selection.

3. It is the instructor's primary responsibility to develop the student's tonal memory and sense of anticipation or expectation, and to increase his span of attention.

4. There should be adequate repetition of a musical selection so that the student may become familiar with it.

5. The problem of form is best approached with the evolutionary method by beginning with the folk song and then proceeding to the more abstract instrumental music.

6. The most useful textbook is one which presents the art of music as a part of social history and in relation to developments in the other arts.

7. It is important that the student be required to attend live performances outside the classroom in order to lessen the tendency toward formation of habits of passive listening.

The psychological "facts" recommended by the writer for use are:

1. Progression from the familiar to the unfamiliar.
2. Awareness of the student's likes and dislikes, attitudes, and of the elements of music to which he responds.
3. The sensorial response to music as the basic one.
4. The role of the secondary laws of association in learning.
5. Clearly perceived goals.

He advises that the college instructor of music appreciation possess a sound knowledge of the principles of learning.

The appendix includes a musical background survey used by the author, two plans of study based upon different principles of organization, and a sample final examination for the course.

Comments. The area chosen for study is a worthy one, for research implies that music appreciation has not been furthered by most college music appreciation classes. The author rightly infers that the primary reason seems to be that many who teach the course lack sufficient knowledge of how people learn. He states that the importance of the subject has been established and justified and that improved teaching based upon sound principles of learning is needed to contribute to the development of discriminating and intelligent musical audiences. His methods of research are simple, being only a review of the literature and the assumed application of selected principles thus found to the teaching of music appreciation. No experimental testing or evaluation was involved.

The most difficult part of writing a dissertation of this type is to clearly relate the findings to classroom procedures. While the writer may have done this in his own mind, it is not always clear to the reader. Most music educators will be disappointed with the small space devoted to (1) materials of instruction and (2) the direct application of findings to teaching the college class. There was no attempt to measure the growth of music appreciation in the class taught by the writer. This can be considered a major defect, for if these ways of teaching are indeed better, we need some kind of evidence to prove it.

The reviewer is aware of a similar study[1/] completed in 1965 in which the candidate attempted to evaluate the effectiveness of applying the principles of learning to the college music appreciation class. He failed to find any valid measure and was forced to devise his own. He could be criticized by those who might doubt the reliability of his devised methods of evaluation. Nevertheless, most music educators would believe it better to have tried to evaluate teaching success than not to have tried at all.

The compilation of data of theoreticians and experimenters in the Hare dissertation will provide assistance for future students in this area.

Footnotes

1. Porter, Donald, An Exploratory Study of the Development of Improved Teaching Procedures in a Music Appreciation Course for General College Students, Ed.D. dissertation, University of Oregon, 1965.

Hester, Wendell Keith. Considerations for a Course Entitled, "Supervision of School Music in the Graduate Program of the University of Southwestern Louisiana."* Teachers College, Columbia University, 1962.

Reviewed by Joseph W. Landon

The subject of this study by Wendell Keith Hester would appear to be timely if we are to view with seriousness the threats of erosion in the arts which are occurring in the curriculum of the public school. With the clamour of public pressures and legislated "antidotes" rapidly mounting which seek to correct so-called shortcomings in the academic program of the schools, it would appear that there is an urgent need for dynamic leadership in the field of music education.

In the opinion of the reviewer, one of the most important aspects of this leadership is the ability to bring musical learnings into what may otherwise be a rather sterile approach to school supervision and administration. It would be shocking if no real case could be made for the substance of aesthetic learning, which is, after all, the sine qua non of any musical experience--most particularly as these learning experiences are outlined by music educators themselves. Such leaders in the field as Burmeister,[1] Hartshorn,[2] Leonhard and House[3, 4] each underscore this principle. Recent pronouncements from humanists, scientists and others who are genuinely concerned with America's rapidly deteriorating position in the arts and humanities also give emphasis to man's need for experiences in these fields. J. Wesley Robb[5] recently pointed out that these fields "...have fostered the goals for life which enable man to live fruitfully and productively." Moreover, the importance of considering the philosophical and aesthetic bases for music education is stressed particularly in the field of the supervision and administration of music by the reviewer,[6] Snyder[7] and others.

In reviewing the study of Hester, there is some allusion to such philosophical considerations, but, unfortunately, many of the real issues and principles for which the supervisor (director, consultant, special teacher, et al) should stand and perhaps for which he should militantly crusade are either lacking or presented in superficial detail. The reviewer has served as chairman of an all-college teacher education committee and as a member of the graduate studies committee of his collegiate institution and has become rather acutely aware of the general apathy and detachment shown by otherwise erudite colleagues in their consideration of the fine arts and humanistic studies. It would appear that unless persons responsible for curriculum content at the college level develop a sense of need and urgency in the raison d'etre for our curricula, we may be helping to write an epitaph not only for the profession of music supervision but for the discipline as a whole.

Although it may be argued that the course of study under consideration was written for graduate students, presumably all of whom are experienced music specialists and who are well grounded in the purpose and function of music in the American public school, it would seem all

* Order number 62-4899, microfilm $4.40, xerox $15.55.

the more important that some reorientation and mature philosophical approach to the field be presented. Current theories of learning, educational philosophy, psychology and sociology should, in the reviewer's opinion, be stressed as a setting for the practical, but nonetheless important mechanics of supervision.

Mr. Hester's coverage of the organization and materials of the supervisory-administrative process, while uncovering nothing particularly new, is presented in a systematic, scholarly fashion. In fact, the presentation of these functions is indeed a strong feature of the study.

The Problem

This study was undertaken to help meet the need for courses in the newly inaugurated graduate curriculum of the University of Southwestern Louisiana. The main body of the work is, in effect, a text which deals with supervision and administration in music education.

The material included in the study was obtained by means of a survey of professional literature, including representative books in general supervision as well as materials in music education. To help guide the selection of material as it is organized for the purpose of the text, the author conducted an informal survey of all state supervisors of music as well as all parish (county) music supervisors in Louisiana. The information provided in the survey included:[8]

1. The functions of music supervisors.
2. The relative frequency of use of various supervisory techniques.

Organization

Part I	Basic considerations necessary for an understanding of supervision and administration.
Part II	A detailed study of the nature, functions and techniques of music supervision.
Part III	A similar study of the administration of music education. According to the author, "The study provides a basis for an understanding of the nature of supervision and administration in music education, and establishes a guiding philosophy."[9]

The Study

The author early points out the obvious relationship which exists between supervision and administration, observing that,[10] "Complete differentiation rarely exists, especially in music education." In addition, the usual guidelines are pointed out in observing the importance of clearly delineated authority and responsibility to get the job done.

Hester mentions the need for supervision (presumably in elementary schools) in pointing out inadequacies in pre-service training of teachers wherein teachers are forced to teach subjects of which they have little knowledge. Improvement of the teaching-learning situation in in-service education will place particular focus on the human element. Mr. Hester contends that before a teaching-learning situation can exist, the necessary personnel, facilities and material must be provided and goals, policies and programs must be agreed upon.11/ The goal of leadership is to implement this.

There is a strange dichotomy in Mr. Hester's statement that "Administration is focused primarily upon conditions surrounding supervision and instruction, whereas supervision deals directly with teachers and pupils."12/

The author concludes that:

1. An activity is instructional if it consists of working directly with children.

2. An activity is supervision if it consists of working directly with teachers and children to improve the teaching-learning situation.

3. An activity is administrative if it deals with environment or setting of teaching-learning situation.

4. An activity may be supervisory or administrative according to the motive behind it and results it produces.

5. Certain supervisory and administrative functions are essential, and if they are not provided for in the school organization, they must be performed by other personnel.

6. Under democratic administrators, there is less distinction between administration and supervision.

The author states that, "The chief administrative officer of the music staff is the director of music who is responsible to the superintendent in all matters pertaining to the music program and should be given the necessary authority to develop and operate a balanced music program."13/ He further delineates the customary line-and-staff relationships which exist and urges that suitable guidelines be stated by the superintendent and agreed upon by principals and the director of music.

The origins and development of music supervision are traced in brief historical review. It would be pointed out that while there can be little disagreement with these historical data (the dearth of material in this field is really appalling!), it is noteworthy to observe that there were equally if not more important developments in education which might be cited to give additional meaning to the need for, as well as the processes, of supervision as it has emerged. In addition to the effects of our rapidly expanding technology in society, there have been significant trends in leadership and cooperative supervisory programs. This study mentions several of these which are importantly cited and emphasized.

The difference between supervision of untrained and trained personnel in the field of music is noted, the author feeling that because specialized music personnel in the secondary school feel more or less "on the spot" under supervision and feel a greater need for determining their own teaching methods, procedures and materials, supervision will more often be concerned with group procedures. Exceptions are mentioned in noting that secondary music teachers need individual help when orientation of new personnel, rendering expert assistance on-call, and in special areas of need are involved.

Some of the suggested group procedures mentioned for assisting secondary music teachers include:

1. Clinics and workshops.
2. Coordinating enterprises involving more than one school.
3. Keeping abreast of new developments and materials to bring to the attention of the group.
4. Cooperative development of curriculum guides (in the area of general music, specifically).

The author divides his discussion of the functions of supervision into the categories of human resources and improvement of curriculum. Among the former, he stresses the importance of working with teachers to inspire, promote professional growth and help in evaluating the effectiveness of learning. In addition, human resources are concerned with working with children in such ways as demonstrating, planning, and using materials and media of instruction (along qualitative rather than quantitative lines). In the improvement of curriculum, the supervisor must help to formulate, evaluate and define activities and experiences which are a part of the learning process.

The writer importantly observes that while an activity is literally a thing to do, "Experiences constitute change in the individual--(and) if the change is to be permanent, most experiences must either be repeated or reinforced by subsequent similar experiences."[14] Thus, the supervisor as an educational leader is committed to the importance of planning which anticipates desirable experiences leading to musical responsiveness on the part of the individual learner. In dealing with the various types of curricular organization, the supervisor must be able to communicate with others the role of music in attaining desired objectives.

Chapter IV deals with supervisory techniques, which are listed in some detail, together with explanatory comments concerning their use and effectiveness in promoting learning. While there is nothing particularly new to add to this listing since it follows rather traditional lines, a listing of these may serve to provide the reader with a framework of this facet of the book.

Techniques of working with individuals:

1. Observation.
2. Intervisitation.
3. Cooperative or team teaching.
4. Demonstrations.
5. Individual conferences.
6. Evaluating or rating teachers.[15]
7. Making use of better teachers.

Techniques of working with groups:

1. Working with teachers in meetings.
2. Working with teachers in study groups.
3. Clinics.
4. Workshops.
5. Preparing study or curriculum guides.
6. Action research.

"The decision as to whether to use a group or an individual technique," according to Hester, "will be dictated by the nature of the particular job to be done and by the amount of time available."[16]

Indirect ways of working:

1. Preparing supervisory bulletins.
2. Doing individual study and research on special problems.

"It must be remembered that techniques are not ends in themselves, but only means to an end. Thinking entirely in terms of how to work may obscure the reason for working and the objectives toward which one strives."[17]

Supervision at the state level in terms of origin, development, status, present purposes and functions, ways of working and relative emphasis placed on various aspects of the program is included in Chapter V of the study. This aspect of the text was put into perspective by drawing comparisons between state and local supervisory practices. Since the author's use was primarily intended for Louisiana, it is not surprising to find a rather detailed section dealing with the activities of the state supervisor and its present incumbent.

Chapters VI and VII and Part I dealt in entirety with administration in music education, including philosophy, scope and working relationships. The function of administration, as dealt with in Mr. Hester's study, envisions this particular leadership role as one primarily concerned with program development, operation, and of clerical routine. It is quite clear from the outset that the author has a particular administrative construct in mind, since he clearly delineates administration as the function of the director of music, with subordinate roles primarily in the supervision of music assigned to the supervisor, consultant, and various special teachers of music.18/

The following functions and activities were listed by the author in the area of administration of the music program:

Leadership in program development:

1. Establishing philosophy and purpose.

2. Developing a music curriculum.19/

3. Developing the music staff.

4. Maintaining good public relations.

Leadership in program operation:

1. Budgeting.

2. Scheduling.

3. Dealing with equipment and materials.

4. Advisory role with respect to housing.

Administrative techniques:

1. Maintaining staff efficiency.

2. Maintaining professional competence.

3. Maintaining contact with professional organizations.

Following the body of the study and the bibliography, the appendix provides a plan for teaching the proposed course at the University of Southwestern Louisiana.

Conclusion

The reviewer felt that the body of the study presented a clear, concise and congent exposition of the processes of music supervision. It cannot be denied that there is a great need for persons preparing to enter the field to become thoroughly aware of the specifics with which they will deal. Mr. Hester has given a great deal of excellent material in this field which should be invaluable to anyone teaching a course such as he proposes.

With due reference to the bibliographical data which the writer has used, it seems somewhat odd to this reviewer that certain important earlier studies which have almost become milestones in music supervision were ignored. I refer in particular to the studies of Barrett,[20] Corson,[21] Dryden,[22] Ernst,[23] Nye,[24] Snyder,[24a] and von Ende.[25] Later studies by this reviewer[26] and Green[27] might have provided additional validation and criteria for the selection and emphasis which was accorded to the functions of city and state supervisors of music. This is particularly regrettable since these studies in depth might have provided a more authoritative base for the college curriculum than the majority of the sources used, except for recent materials in the field. In addition, periodical and other data concerning learning and the dynamics of the leadership function were notably missing.

It was this reviewer's opinion that Mr. Hester also made too strong a separation of the functions of administration and supervision, and that an almost arbitrary division was made in some instances.

Despite these objections, in retrospect, the study is worthy of note and does give considerable help to persons in the profession wishing to re-assess the total role of music supervision or to organize and teach graduate classes dealing with these areas.

Footnotes

1. Burmeister, C. A., "The Role of Music in General Education," Basic Concepts in Music Education, Part I. The Fifty-Seventh Yearbook of the National Society for the Study of Education, Chicago, University of Chicago Press, 1958, pp. 215-235.

2. William C. Hartshorn, Music for the Academically Talented, Washington, The National Education Association and the Music Educators National Conference, 1960, pp. 15-20.

3. Leonhard, Charles, "The Place of Music in Our Elementary and Secondary Schools," The NEA Journal, April 1963, pp. 40-42.

4. Charles Leonhard and Robert W. House, Foundations and Principles of Music Education, New York: McGraw-Hill Book Co., 1959, pp. 142-171.

5. J. Wesley Robb, "The Humanities and the Sciences," Alumni Review, Los Angeles, The University of Southern California, April 1965, pp. 11-12.

6. Joseph W. Landon, Music Supervision in California City Schools, unpublished doctoral dissertation, the University of Southern California, 1959, Los Angeles, pp. 24-30 and Chapter II, pp. 22-101.

7. Keith D. Snyder, School Music Administration and Supervision, Boston, Allyn and Bacon, Inc., 1959, pp. 69-95.

8. Landon, loc. cit., One hundred forty-four functions of music supervisors in California city schools were surveyed in terms of actual use, and, recommended relative emphasis, similar to the information sought by Hester for use in Louisiana.

9. Hester, loc. cit. See the reviewer's prior comments regarding philosophy.

10. Ibid. p. 2.

11. A somewhat perplexing statement since, in the opinion of this reviewer, teacher-learning situations exist whenever there are learners and learning situations, and since all affected by the learning situation must share in the development of goals, processes, and needed material with which to improve learning.

12. Hester, loc. cit., p. 2 quoting from MENC: Music Supervision and Administration in Schools.

13. Ibid. p. 12.

14. Ibid. p. 109.

15. This function appears to be contradictory in the author's own definition of administrative vs. supervisory functions.

16. Hester, loc. cit. p. 173.

17. Ibid. p. 182.

18. The reviewer found these titles far from common in actual practice in a study of California, where no less than 31 separate titles with a multitude of overlapping functions were found.

19. Hester, loc. cit. p. 260. This function too apparently is somewhat in conflict with the author's definition of "supervisory," except that it relates to what he terms the "environment or setting of the teaching-learning situation."

20. James H. Barrett, Administrative Leadership for Music Education, unpublished doctoral dissertation, Colorado State University, 1953, 173 pp.

21. Donald B. Corson, Administration of Instrumental Music in Selected Secondary Schools of New Jersey, unpublished doctoral dissertation, University of Pennsylvania, 1948, 108 pp.

22. Harry Richard Dryden, A Survey of the Supervisory Practices in the Field of Music in the Public Elementary Schools of Pennsylvania, University of Pittsburgh, 1954, 238 pp.

23. Karl D. Ernst, A Study of Certain Practices in Music Education in School Systems of Cities Over 150,000 Population, unpublished doctoral dissertation, University of Oregon, 1955, 214 pp.

24. Robert Evans Nye, Critical Survey and Evaluation of Practices in Cooperative Supervision of Music in the Elementary School, unpublished doctoral dissertation, The University of Wisconsin, 1949, 133 pp.

24a. Keith Dewitt Snyder, Public School Music Administration, New York: Columbia University, 1953, 271 pp.

25. Richard Chaffey von Ende, The Administration of Musical Education in the Public Schools of Large Cities, unpublished doctoral dissertation, The University of Pittsburgh, 1941, 230 pp.

26. Landon, *loc. cit*.

27. John Elwyn Green, School Music Services in State Departments of Education with Implications for California, unpublished doctoral dissertation, The University of Southern California, 1959.

Hewlett, Rex J. An Investigation of the Effectiveness of Two Methods of Student Response Using a Taped Program of Practice Materials for Improving Aural Discrimination. Reviewed by Edward L. Rainbow. Michigan State University, 1966.

Introduction

The teaching of ear training has been a major goal of college level music theory courses. The traditional ear training process has the teacher playing dictation exercises at the keyboard while the student listens and responds by notating what he has heard. Hewlett has noted that the traditional approach has been the subject of criticism and has led to a search for improved ear training methods.

One of the results of the search has been the development and the experimental testing of tape recorded material for ear training practice. Hewlett has summarized a number of experimental investigations which suggest ear training methods utilizing programed tape recorded materials can be at least as effective as the traditional ear training methods.

Programed ear training materials require that the student listen to the recorded dictation exercises and respond by notating what he has heard. The use of programed materials enables the student to advance at his own rate and provides him with immediate reinforcement of his written response. Programed ear training methods thus overcome some of the criticisms leveled at the more traditional methods. The programed method and the traditional method do, however, have similarities in that all responses are written responses.

Hewlett studied the mode of response found in the programed ear training exercises. The study sought to (experimentally) compare the effectiveness of programed ear training exercises using the traditional written response with the effectiveness of the programed exercises using a played response. In the former, the student notated what he had heard, in the latter he performed what he had heard on a keyboard instrument.

The central problem was to determine if improvement of aural discrimination would be greater if the practice response to an aural stimulus was played rather than written. In addition, Hewlett investigated the following sub-problems:

1. Learn if sightsinging progress would be greater if dictation practice responses were played rather than written.
2. Study the relationship of the two types of practice on improvement in error detection type of dictation.
3. Determine the effect of previous keyboard experience on the two methods.
4. Examine the relationshio of the two responses to high and low beginning levels of aural perception.
5. Observe any interaction between scholastic aptitude and (1) achievement in aural perception, and (2) the response mode.

Methods and Procedures

Three first year music theory classes were involved in this study. Students who received high scores on a theory and ear training examination were not involved in the study. Hewlett devised a set of dictation exercises to cover the areas of pitch, rhythm, and complete melodic dictation. These exercises were recorded on a total of forty-five magnetic tapes.

Pretests in aural perception and sightsinging were developed for the purposes of this study and were administered to the student who initially participated in the investigation. Hewlett reported that the split-half reliabilities for the aural perception and the sightsinging tests were .75 and .74 respectively.

On the basis of the sightsinging and aural perception pretest, ACT percentile scores, and piano placement audition scores, the students were divided into two equated groups. The students were then randomly assigned to either the Experimental or the Control group.

To minimize the effects of teaching differences, the students of both the experimental and control groups were scattered through three laboratory sections. The sections were planned so that the learning experiences in each section included rhythmic, melodic and harmonic dictation, sightsinging, keyboard practice, and acquaintance with music literature. Practice in rhythmic and melodic dictation was eliminated from the laboratory class periods. The students were instructed to practice rhythmic and melodic dictation by listening to each of the forty-five programed tapes twice.

The Control group practiced rhythmic and melodic dictation by listening to the taped exercises twice and then wrote a response for each exercise. The student was advised to immediately check each response with the answer sheet. The student could then play the exercise a third time while watching the answer sheet for a combined aural and visual reinforcement.

Those students in the Experimental group listened and then played their responses at the piano keyboard. After the second hearing and played response, the students were advised to check their answer sheet for a visual reinforcement.

The posttests in sightsinging and dictation were given after all the students had completed the taped program.

Results and Conclusions

Hewlett encountered several difficulties. A problem of motivation in one of the laboratory sections resulted in an unspecified number of students not completing the experiment. A second group of students was lost between school semesters when an unspecified number of students dropped or failed the course and did not continue in music.

Hewlett does not inform the reader how many students began the experiment. The encountered difficulties, however, reduced the study population to twenty-nine students: fifteen in the experimental group and fourteen in the control group. The Mann-Whitney U test, a nonparametric statistical measure, was used to evaluate the effectiveness of the two methods. The Mann-Whitney U test focuses on the ranking of scores and is not a comparison of arithmetic means. Rank order correlations were used to investigate sub-problems. The five percent level of confidence was used for all U tests.

The results of the statistical analyses indicated that no significant difference was found between the two practice methods for (1) overall dictation, (2) sightsinging improvement, and (3) rhythm dictation. Significant differences in favor of the Experimental group occurred in error detection dictation. A significant relationship was not found between the practice mode and high and low levels of aural perception. Significant differences in dictation gain were not noticed between groups as a result of piano background.

Hewlett's conclusions follow. (1) Played response practice method is as useful as the written response practice method; and that once a student has a basic amount of practice in notation of music, further practice in written dictation is not essential to the development of a good aural-visual sensitivity. (2) Because the experimental group gain was significantly higher in error detection dictation, the played response method may be of value for the training of conductors. (3) Th played response method will be at least as effective as the usual written response practice method even though the student may lack prior keyboard training. (4) The is little overall relation between dictation improvement and scholastic aptitude is more closely related to the written method which required the learning of notation skills than to the played method.

Critique

The study, as originally conceived by Hewlett, is excellent. All pretests and posttests were checked for reliability and the reliabilities are reported. The students involved in the experiment were carefully matched according to scores and ratings received on pretests of aural perception and sightsinging ability, ACT percentile scores, and results of a piano placement audition. The students were then randomly assigned to the Experimental and Control group. Hewlett attempted t control teacher effect by having students in the experimental and control groups in the same laboratory sections. The Hawthorne effect was also effectively contro

It appears to this reviewer that the experiment was originally designed to be completed within one semester. For some unknown reason, Hewlett was unable to complete the experiment within the semester and as a result experienced unforeseen difficultues. Failure to control the completion time of the experiment resulted in a loss of subjects in both the Experimental and Control groups. The mortality rate was not reported, but Hewlett infers it was sizeable.

The careful manner in which Hewlett matched and randomized his Experimental and Control subjects indicates that he had intended to use parametric statistics. This reviewer assumes mortality of experimental and control subjects led him to the decision to use a nonparametric statistic in an attempt to salvage the experiment.

This reviewer believes that the most efficient statistical design for this study, as it was originally conceived, would have been a two or three dimensional factorial design utilizing analysis of variance. This design would have permitted the testing of the interactions of the dependent and independent variables, one of the stated sub-problems of the investigation that he was unable to effectively investigate. This design would have also permitted a more effective analysis of all the information collected.

The loss of a number of students who did not complete the experiment because of failing work and the exclusion from the study of those who were initially superior students deprived the study of an important element. In effect this exclusion eliminated the best and worst music students from investigation. Therefore, Hewlett was unable to properly examine another one of his sub-problems, the relationship of the two response methods of high and low beginning levels to aural perception. The topic is worthy of reinvestigation. A replication of the study with better control over the completion time of the experiment is highly recommend

Hunt, Norman John. A Study of the Use of Baroque Brass Ensemble Literature in Instrumental Music-Teacher Education. Reviewed by Edgar J. Lewis. University of California, Berkeley, 1966.

Purpose and Procedure

The purpose of this study, as stated by the author, "was to measure musical growth through the use of Baroque literature for brass instruments, and to determine whether there is any particular level of talent for which this music is uniquely appropriate or whether it is equally effective for all groups." Related purposes were stated as pertaining to a consideration of curricular appropriateness and the development of a rationale for the use of music of a particular historical period as training material. This statement of purpose is built upon the assumption, that the most common approach to brass teaching is to "mechanistic" and that brass students tend to be deprived of sufficient exposure to satisfying and worthwhile literature. The author makes it clear that his answers were to be obtained experimentally rather than by stylistic analysis or philosophical considerations.

The initial procedural step in the study was to organize a repertoire of Baroque music suitable for brass instruments, this music to be used in the teaching of brass classes in three selected state colleges in California. All classes using this material were to meet the same number of hours per semester. The second step was to pretest all student participants to determine levels of proficiency at the beginning of the experiment. This was conducted by means of subjective evaluation by a panel of six qualified adjudicators. Levels of proficiency were established on a scale of from one (poor) through five (superior). The rating form provided for the judges established tone, intonation, technique, and interpretation as the four main criteria with appropriate subheadings under each of these main categories. Participating subjects were also assigned to three arbitrary groupings (high, middle, and low) on the basis of general aptitudes as measured by standard college entrance examinations. After a semester of exposure to the music selected for the study, the subjects were given a post-test which was then subjected to statistical evaluation against both the pretest, results and the general college ability groupings.

Results

On the basis of a thorough application of statistical techniques to the data gained from the various testing procedures, demonstrated in no less than 40 tables, the author concludes that significant progress was made by all subjects. This measure of progress is then cited as proof of the validity of the use of Baroque music as instructional material for college-level brass students.

A less predictable and more provocative by-product of the study was the discovery of the failure of standard tests of general college ability to predict levels of ability or progress in performance on brass instruments. The specific nature of the findings is stated by the author as follows:

> In all sixteen items rated on the brass instrument performance scale, the high-level ability group, according to scores gained on college entrance examinations, started with a lower performance level on the criterion measure and made less progress throughout the instructional period than students in the middle and low groupings. The middle-level grouping of subjects started higher, made more progress throughout the

> instructional period, and finished higher than either the high or the low group. The low-ability group started higher than the high-ability group and in all instances made greater progress during the instructional period.

A number of questions raised by this finding are stated as possible grounds for further research by other investigators. Space does not permit the inclusion of these questions, but this portion of the thesis might well be sought out by interested persons in search of promising research problems.

Critique

The inescapable question which arises concerning this study is whether or not it really proves what it sets out to prove. The mass of carefully organized statistical evidence makes it clear enough that all of the students participating in the study showed improvement in performance technique, but one would normally expect measurable improvement in this kind of a class regardless of the instructional materials used. The description of the procedure used in the study does not mention the use of any control group using either conventional instructional material or the music of any other single historical era for comparison. Furthermore, the amount of class time devoted to the project by the subject students is stated, but is admitted that there was no way of controlling individual practice time. No reference is made to the nature or extent of other musical experiences which may have influenced the subjects.

A second important question concerns the validity of basing the major premise of the thesis on a body of musical literature which had to be arranged and significantly modified to make it suitable for the use to which it was put. The author makes it clear that most of the so-called brass music of the Baroque era was written for combinations involving the Baroque family of trombones and the cornett (the obsolete wooden instrument with finger-holes and a cup mouthpiece), or for natural trumpets in highly specialized situations, so that it had to be rewritten to provide parts for modern trumpets, French horn, baritone horn, and tuba. It is also stated that most of the modern settings had to be transposed downward by at least a third from the original keys, and that dynamic, phrase, and tempo markings were added. The note values had in most cases been halved. While it is not relevant here to question any of these individual procedures _per se_, one is forced to conclude that the case for Baroque music as training material for brass instruments is considerably weakened by the obvious fact that modern adaptations, no matter how tastefully and knowingly done, cannot convey exactly the same musical sense and spirit as the original versions of the music.

The point which needs to be clarified is that it is not the specifically Baroque character of the music in question which makes it seem suitable as training material for brass players, but rather the fact that, because it was written for wind instruments of another time, it does have limitations and intrinsic style characteristics which make it relatively easy to adapt to the needs and limitations of modern brass students. The dilemma which has not been acknowledged in this study is that Baroque music, _when played as Baroque music_, has certain stylistic limitations which would tend to limit the student's experience with the full range of musical expression. But when the music is modified in order to broaden the musical and technical experience of the performer, as has been done here, it loses its original stylistic identify. Thus it would seem that any possible pedagogical gain in the area of brass performance technique which could be obtained by presenting this music to students as Baroque music would come at the expense of serious danger of misunderstanding the true style characteristics of an important historical period.

The long chapter entitled "Review of Selected Literature" is a summary of the main general style characteristics of the Baroque period, a summary history of the individual brass instruments, both ancient and modern, and a brief discussion and listing of the music selected and transcribed for the study. Although it would seem that the purpose of much of this chapter was to cope in advance with possible criticisms of the type stated above, it fails in this by attempting to cover too much material in too brief a manner. This chapter makes it clear enough that the author has fulfilled his academic obligation to survey pertinent background literature but a hopeful reader should be warned that his search for complete facts, relationships, and evaluations concerning the instrumental music of the Baroque era might better be conducted among the sources which the author acknowledges in his bibliography.

It may be in some way significant that the only specific errors which this reader found in a typescript remarkably free of mistakes were slips in the use of foreign languages. The use of temeine rechte for gemeine rechte posaun (sic) with reference to Praetorius' classification of trombones may have been typographical, but the all too consistent failure to capitalize German nouns cannot be so readily excused. The repeated use of con ogni sorti de stromata instead of con ogni sorte di stromenti (with any kind of instruments) is a misuse of a phrase which is familiar to all scholars of Italian instrumental music of the seventeenth century. To let this sort of error go unobserved would be to perpetuate faulty usages of foreign languages since those unfamiliar with a given language are quite likely to reproduce incorrect words or phrases which they find in otherwise reliable scholarly documents.

This reviewer sincerely regrets his inability to give unqualified praise to this thesis because it is quite evident that the author was thorough and competent in the organization of the project and in the meticulous treatment of the statistical data gained from testing. As an academic exercise in the application of statistical method to a pedagogical problem it undoubtedly merits high praise. It is unfortunate, however, that it does not offer more for the reader in search of otherwise unavailable information and conclusions leading to valid new ideas.

Jackson, Marjorie. The Oboe: A Study of Its Development and Use.* Teachers College, Columbia University, 1962.

Reviewed by Blaine E. Edlefsen

The author's statements in the introduction and first chapter make it quite clear what the study is supposed to be and to accomplish.

> "This study seeks to provide a comprehensive picture of the oboe that will enlarge the concept of teacher, student and performer. As a source book, it endeavors to afford an appreciation of the art of the oboe which requires, beside knowledge of music in general, a study of the
>
> 1. acoustical principles of the oboe as a sound producing instrument
> 2. evolution of the mechanical devices by which these principles are used
> 3. history of the instrument
> 4. reed and reed making
> 5. problems of the instrument
> 6. musical and technical development of the player
> 7. oboe as a solo instrument
> 8. use of the oboe in the orchestra, wind band, and ensemble."

Each area of study just enumerated is included in the thesis either as the subject of one or more chapters or as a section of a chapter.

Its purpose also is

> "to give an overview of the oboe that will serve as a resource for performers, teachers, and students of the instrument. The author has attempted to select and combine, as well as interpret, information that may be of interest to and use to the defined audience. The project is neither a method, text or treatise; it seeks to provide a comprehensive treatment and appreciation of the art of the oboe. . . In addition, an acquaintance with the personality of the performer is required since he, as well as his instrument, is the product of progress and of survival. Biographical notes on celebrated oboists are therefore included.
>
> Since each chapter could become a thesis in itself, all the author can hope to do, in so comprehensive a work (The text is 168 pp; the bibliography is 6 pp.) is set down duly considered information and conclusions that have been received during the course of many years of study."

It was impossible to cover thoroughly more than a few phases of the study because of its prescribed limits. The author had to rely on condensation, on compression of pertinent information. It is extremely difficult under these circumstances to gauge how much should be written. The author's responsibility in this case is to indicate through evidence on the written page that she is at least aware of the complexity or limits of any topic. The material presented in this thesis indicates that the writer did not always carry out this responsibility.

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The author tried to be comprehensive by giving at least some attention to most phases of the "art of the oboe." In many areas, unfortunately, she presents a very narrow view, often through apparent ignorance or prejudice. Several examples of this appear below.

Chapter III which discusses the advent and development of the oboe from the Philidors through Sellner, Brod, Boehm, the Trieberts, to Gillet and Loree contains little information not already in Philip Bate's book, *The Oboe*, or in the Anthony Baines book, *Woodwind Instruments and their History*. Appendix I, the biographical sketches on celebrated oboists and teachers, contains much of the material which appears in a similar section in the Bate book.

The course of study for the oboist which appears in Appendix III was "taken from the Bulletin of the Eastman School of Music," and the list of "available serious solo music for oboe and piano" appearing in the same section was compiled by Joseph Marx for the National Association of School of Music, Bulletin No. 31, January 1951, pp. 8-11. In the section on Solo and Chamber Repertoire of Chapter VII the author declares that "unfortunately the solo repertoire of the oboe is not very extensive," and does not include a discussion of modern works for oboe and piano or for oboe and orchestra "because of the difficulty of finding a complete list." These sections on literature--always interesting to oboists--are places where the author could have at least noted her own favorite works for instruction and performance, but she chose to copy from other sources or omit entire areas..

In the section on technical capabilities of tone and articulation a table enumerates and classifies those trills and tremelos that are playable on the Conservatory oboe with the limited range, $\underline{b}^{b}$ and $\underline{c}^{3}$. The chart lists the trill $\underline{c}^{1}$- $\underline{c}^{\#1}$ as impractical. This trill can be executed with ease, however, if the oboe is equipped with the additional $\underline{c}^{1}$ key--or banana key as it is sometimes called--which is standard on all #6 model oboes. It is depressed by the ring finger of the right hand. Also the trill up a half step from $\underline{a}^{\#1}$ and $\underline{a}^{\#2}$ does not have to be one with "poor intonation" as the author indicates on the chart. Oboe players should be very thankful to the inventor of the ingenious pitch compensating device on plateau model oboes which is operated by the depression of the left hand $\underline{g}^{\#}$ key. Not only does the device act to depress the c pad which would normally have to be depressed by playing the spatula key with the first finger of the left hand, but it also causes the depression of the perforated plate under the middle finger of the left hand. This lowered plate compensates for the sharpness that otherwise would have resulted from the raised $\underline{b}^{b}$ pad. In spite of the elaborate explanation of how this trill is operated, the fingering of the trill $\underline{a}^{\#1}$ to $\underline{b}^{1}$ is simply ●●og$^{\#}$/●oo, beating the middle finger of the left hand. It is very well in tune, although one may notice a slightly different quality for the $\underline{b}$ than the regular fingering would produce.

In the section on the manufacturing process, the author notes that "oboes were not manufactured in this country until recently." After mentioning two vèry prominent American oboe makers she concludes, "It seems therefore, that the manufacture of oboes is flourishing for the first time in the United States since the advent of the metal oboe some thirty years ago." It would have been interesting to know the real extent of oboe manufacturing in this country, as it seems doubtful that these two men are solely responsible for the flourishing American oboe-making industry.

The topic in Chapter VI is the development of the oboe player. The author discusses to some extent schools of oboe playing which, she contends, are based fundamentally upon the concept of sound. The countries mentioned where distinguishable schools of oboe playing are present are France, England, Germany, Austria, Italy, and the United States. "Since the greatest difference between 'schools of playing' are in the embouchure and the reed, the....discussion is limited to these variables." Other variables mentioned as determining factors in executing a concept of sound are the instrument and player. Very little attention is given to sound itself. The author could have expanded this section by commenting further on the areas of vibrato and articulation styles. To most oboists, these last two seems to be very important variables which produce great differences between schools of oboe playing. A well deserved explanation of the innovations of Marcel Tabuteau is also contained in this section. One might note that the mention of a famous contemporary Dutch school of oboe playing established early in the 20th century by Jaap Stotijn was conspicuous by its absence(1).

A rather restricted view on how the oboe should be held while playing is presented in the section on tone, p. 98. The author does not take into account that, among other things, all oboe players are not built alike and therefore may not care to hold the oboe at "a declination of about six inches (measuring from the thumb of the right hand), from the body."

Important statements, concepts, and information are, of course, given in the work, though few subjects are written or explained in depth or detail. For example, Chapter II on the forerunners of the oboe, though not comprehensive by any means, contains as much information as most oboists need to know or even care to know about such instruments as the zamr, auloi, krummhorn, cornemuses, shawms, and the oboes of Poitou.

Chapter IV, The Oboe Today, includes several good sections. The description of the procedure used to season the wood and the various steps a maker must follow to complete the building of an instrument are very informative. Many acoustical matters pertaining to the oboe are reviewed including the coupled system, the formant theory, and the use of harmonics. Modern oboe systems used through the world are mentioned, and a resumé of the capabilities of these instruments is presented. Particularly important are the statements about the characteristics of the registers and the possible changes in the oboe tone quality.

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(1) For a short but informative description of this truly original and outstanding school of oboe playing see the article by Don Jaeger, Nancy Fowler, and Don Muggeridge, "Hobos in Holland," Woodwind World, VII, No. 7. (June 1, 1960), p. 9.

Chapter VI explains how an oboe player is developed. The material is based on the author's experience and study (2). This part allots space to the problems of the instrument such as breathing and tone. Short comments on phrasing, articulation, embouchure, vibrato, and pitch are noteworthy sections.

The bibliography contains, of course, many worthwhile references including several articles in French from which the author quotes extensively.

There seems to be no doubt in the author's mind what should have been accomplished by such a study

> "Let is be understood that the author sincerely hopes the foregoing has been of help in affording a more comprehensive picture of the oboe to all its students--be they performers, pupils or teachers. For the professional it offers background; for the teacher it should lend understanding to instruction; for the student it provides a road map from the past to the present that the future may be better charted. For all it is a compilation of material."

The work in many respects does exactly what the author said it should do. The question which comes to mind, however, is whether or not the author did "provide a comprehensive treatment and appreciation of the art of the oboe" in such a short work. A contradiction is apparent when the author says that the work is comprehensive and yet "each chapter could become a thesis in itself." One might question whether such a "comprehensive" work should have been attempted as a doctoral thesis or whether the subject of one of the chapters--or even one of the sections of a chapter--should rather have been chosen and dealt with exhaustively.

To this reviewer the thesis does not provide both "a comprehensive treatment and appreciation of the art of the oboe..." Perhaps it succeeds mainly as an appreciation of the subject. The thesis reads somewhat like a gigantic chapter on the oboe, a chapter that might be found in a text book on music appreciation. It does, fortunately, show that insight into the subject which only an experienced oboist is able to give.

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(2) The author's professional background includes positions as an oboist in the Pittsburgh and Chautaugua orchestras for many seasons, and with the Louisville and Central Opera orchestras as well. Apparently, while in Louisville, the author served as an Associate Professor at the University of Louisville for some three years. In addition to these positions the author toured with the Martha Graham dance group, the Metropolitan Opera Association and various other organizations. Her most influential teachers were Bruno Labate and Marcel Tabuteau.

Jensen, Lloyd Soren. Perceptions of Selected Band Conductors Concerning Their Philosophical Concepts as Related to Rehearsal Techniques Which Contribute to an Aesthetical Performance. Reviewed by Alan H. Drake. Colorado State College, 1965.

Introduction

Training in the technical aspects of conducting is usually available to the aspiring band director through college courses, books, and certain laboratory experiences. However, the knowledge and techniques necessary to the conductor in order to create a truly aesthetic performance are often neglected in his education. Most conducting courses and textbooks dwell heavily on baton technique and related material. Although such technique is essential, it is lamentable that more time is not devoted to the most important aspect of conducting, namely, the ability to motivate and train an organization in such a way that aesthetically satisfying musical experiences are continuously realized in rehearsal and in concert. Jensen, in recognizing this need, developed a very interesting and informative dissertation based upon personal interviews and observations of five noted American college band directors.

Method of Research

The five conductors were selected on the basis of a questionnaire sent to all members of the American School Band Directors Association, an honorary national organization of secondary school band directors, and to officers of the American Bandmasters Association and the College Band Directors National Association. The conductors chosen, listed alphabetically, were Frederick C. Ebbs, Mark Hindsley, Donald E. McGinnis, William D. Revelli, and Clarence E. Sawhill.

Jensen observed and interviewed the first four conductors at times when they were preparing performances with their college bands. Clarence Sawhill was interviewed while working with a California State High School Honor Band. The personal interviews were tape recorded and the complete transcripts were given in the appendices. A chapter in the dissertation is devoted to each conductor, including summarizations of the information and concepts gleaned from the interview and the observation. Both the interview and observations were structured toward answering a fairly lengthy list of questions related to the attainment of an aesthetic musical experience, although the informality of the interview technique did not necessitate the answering of each specific question. The interview questions covered the following subjects: musical background and teaching experience of the subject, philosophical musical concepts of the subject, psychological concepts utilized by the subjects, rehearsal techniques utilized by the subjects which contribute to an anesthetic experience, opinions of the subjects concerning the teaching of the aspiring conductor. Jensen's observations covered such items as physical environment and schedule, concepts and techniques of the subject as shown in his rehearsal, and responsiveness of the performers. The interview questions and the observational items were derived from a review of literature.

Summary of the Conclusions

Jensen's abstract lists the following conclusions which constitute "a synthesis of the primary perceptions which were considered by the subjects to be imperative in preparing and presenting bands whose performances were of the highest degree of excellence resulting in an aesthetical experience."

1. The environmental influences of the early formative years exerted a significant influence upon the formulation of basic music concepts.

2. The primary justification of music education was dependent upon the realization of an aesthetical experience.

3. Musicality could be enhanced through assiduous study and performance on a major instrument.

4. A command of the fundamental theories of learning was considered essential in developing communicative effectiveness.

5. Intellectualism and musicality are imperative; an aesthetical experience, however, would be dependent upon successful application.

6. An aesthetical experience would be subordinate to meaningful understanding and the desire of applying this knowledge.

7. The conductor must be a dedicated teacher whose uncompromising musicality, integrity, and sincerity elicit a mental alertness and desire to strive for the ultimate in perfection.

8. An aesthetical experience can be limited only to the innate abilities of the individual.

9. By means of observation and differentiation, insight may be stimulated, thus formulating exemplary music concepts.

10. Aesthetic sensitivity may be cultivated through: (a) performance; (b) recreation of significant music literature; and (c) the desirous application of musicality.

11. Conductorial gestures must be meaningful and motivational.

Critique

Although current trends in music education research are toward experimental, statistically oriented studies, there are still many areas of interest which may be pursued by means of other methods. Jensen is to be commended for his attempt to bring together the ideas and practices of highly successful band conductors. There is much excellent information contained in the voluminous study (331 pages including the appendix). There is considerable repetition, but the findings are presented clearly. A study in depth of only five subjects no doubt yielded more detailed information than would have been possible in a study using more subjects. Nevertheless, to generalize the conclusions of such a small sample, however eminent the subjects may be, would be somewhat dangerous. Jensen has not actually done this in his conclusions, but his recommendations indicate that the beliefs of his subjects should be incorporated into the training of future conductors. Inasmuch as the conclusions are based upon the experience-tested beliefs of highly successful conductors in their field, the study can be used to advantage in lieu of a more complete and general analysis. This is a highly interesting and valuable dissertation for all band conductors, and it has contributed significant knowledge to an area which remains largely unexplored.

Johnson, Hugh B., Jr. An Investigation of the Tuning Preferences of a Selected Group of Singers with Reference to Just Intonation, Pythagorean Tuning, and Equal Temperament.* Indiana University, 1963

Reviewed by Paul R. Lehman

Purpose

The purpose of Johnson's study was to determine whether vocally trained subjects with ensemble experience demonstrated a clear preference for equal temperament, just intonation, or Pythagorean tuning in a musical context predominantly harmonic rather than melodic. It was also concerned with whether this preference was influenced by either the pitch level of the progression or the position of the chord.

Procedure

The author conducted three separate experiments, comparing each pair of tuning systems. Each experiment, or test, consisted of 160 items based on the chordal progression I-V-I in two keys. Chords in both open and close position were used and various chord tones were employed in the soprano. A total of four variants were presented. In each item the progression was played twice. The repetition was identical except for the tuning system employed. The subjects were 30 undergraduate and graduate students with vocal training and experience.

Items from the three experiments were mixed at random. There were four test sessions, each 20 minutes in length. In order to establish the realiability of the tests, ten of the subjects were retested at least three weeks later. The stimuli, which were presented by tape, were produced by an assembly of electronic organ tone generators tuned according to the respective tuning systems and checked by a Stroboconn.

Results

It was found that the subjects preferred (1) equal temperatment to just intonation (especially when the third of the tonic chord was in the soprano) by an average margin of 72 percent to 28 percent, (2) Pythagorean tuning to just intonation (especially at lower pitch levels and when the third of the tonic chord was in the soprano) by a margin of 69 percent to 31 percent, and (3) Pythagorean tuning to equal temperament by a margin of 51 percent to 49 percent. The author interprets the first two results as representing decided preferences but regards the third as showing no such preference. He concludes that the degree of preference is affected by changes in the pitch level of the progression but not by changes in chord position.

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Discussion

Johnson defines his problem clearly and utilizes procedures appropriate to its solution. He summarizes well the limitations of his study, and his descriptions are sufficiently detailed that it would be possible for the reader to repeat the experiment.

Although the conclusions of the author appear, on the basis of examination of the data, to be justified, the reader might have a greater feeling of assurance if he were told that the differences between the means were or were not statistically significant and if he were told the level at which they were or were not. Except for one footnote reference, there is nothing in the report to suggest that the author subjected any of his data to tests of statistical significance.

The instructions to the subject specify that the task is to indicate which of the two progressions "sounds best (sic) in tune." Since both are perfectly in tune, according to different tuning systems, the assumption is that the subject will reveal which system he prerers. One might speculate at length concerning the factors affecting the subject's choice. Seashore found in his consonance test that, despite his best efforts to define the criteria for selection, it appeared that irrelevant factors were influencing his subjects' decisions. In Johnson's test one student might prefer the just triad because of its smooth, beatless blending while another might consider this blandness too insipidly dull and prefer the Pythagorean triad for its bright, exhilarating radiance. The author acknowledges that many subjects subsequently reported difficulty with one particular chord variant among those that contrasted the just and Pythagorean systems. The difficulty arose from having to choose between the "smooth" sound of the former and the "more agreeably tuned but rougher" sound of the latter. It might have been helpful to define more specifically the criteria upon which the subject was to base his response.

The author appears to be somewhat uncertain as to what correlation coefficients are, inasmuch as he consistently expresses them as percentages. There are two minor errors in his comparisons between the tuning systems: the seventh degree is actually 12 cents flatter in the just scale than in the tempered scale than in the Pythagorean scale, rather than 8 cents. Nevertheless, Johnson's study was conducted and reported with admirable thoroughness. It is a worthy contribution to the understanding of intonation, particularly since most such experiments have employed melodic rather than harmonic materials.

Many readers will share the author's hope for subsequent research relating singers' preferences to their performance practices.

Kaplan, Lionel. The Relationship Between Certain Personality Characteristics and Achievement in Instrumental Music.* New York University, 1961.

Reviewed by Howard G. White

Music educators of today are faced with a plethora of emergent sociocultural problems which contain dramatic implications for the future of all music education programs. Some of the most compelling problems are: bulging school enrollments, lack of qualified music teachers, scheduling problems, pressure for successful public performances, increasing cost of equipment, the limitation of available public funds, the competition of choices available for leisure time pursuits, and the pervading threat of the encroachment of popular culture on traditional musical values. In addition to these problems it may be added that increasing upward mobility in the social-class structure of American society has enabled a greater number of people to be able to afford and desire a musical education for their children. Also, the general rise of school enrollments is chiefly encountered in urban and suburban and not rural schools. Music teachers in these schools are realizing that their credo--"Music for Every Child, Every Child for Music"--is becoming an impossible if not an impractical burden. These along with other contemporary trends are forcing many music educators to reassess their programs and seek solutions to emergent problems.

The problem. In an attempt to offer one solution to the problems now facing music educators, Dr. Kaplan elected to study the relationship between certain personality characteristics and achievement in instrumental music. He felt that it was necessary and desirable to find a valid way in which to identify those who would receive the most benefit from the study of an instrument. On the basis of the findings he hoped to identify potentially high achievers, suggest the purchase and study of an instrument to them, advise private study, and indicate valid groupings of students according to ability or on the basis of needs. He did not suggest that the findings should be employed by counselors and music teachers as a method of rejecting students, but that students might be informed of their "normal expectancy" and be allowed to make their own choice. The investigator stressed that low achievers were not to be denied participation in instrumental music, but that a separate track be offered them.

> Thus, for low achievers, it may be found that the experience of creative expression and the intimate relationships generated among students, and between student and teacher...and the attention given each individual, may serve to meet the want-satisfactions of certain personality profiles. Hence, while one group of students may be accepted and trained because of their potential for becoming capable performers, another group, though potential achievement may be low, may be encouraged to study because of personal satisfaction that might be derived; because added dimensions of personality may be developed through participation in an instrument program. (Page 2)

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> Then the time, energy, and equipment could be better invested in those students who would benefit most from this type of training. The teacher, too, would be spared the expenditure of energy and professional frustration involved in teaching students who show little promise of deriving benefit from his effort. Given groups selected according to their nature, the teacher could adjust his philosophical, psychological, and educational orientation to meet the needs of these groups. (Page 3)

Procedures. Dr. Kaplan propounded no hypothesis but designed a study to ascertain whether or not a possible relationship exists between personality characteristics and achievement in instrumental music. To solve this problem he found it necessary to measure musical achievement, to assess personality, select a sample for study, and statistically compare the data. To measure musical achievement objectively he selected the well-known Watkins-Farnum Performance Scale. To assess personality he employed The Manifold Interest Schedule. This schedule revealed attitudes toward various interpersonal relationships, interest in 12 academic areas, and six personality profiles. The broad profiles included: "A" or "turbulent," "B" or "self-controlling," "C" or "fearful," "D" or "intellectualizing," "E" or "feeling," and "F" or "self-confident" and "assertive." The investigator chose an "approximate random sample" of 300 music students and 300 nonmusic students from six academic high schools in New York City. An attempt was made to equate the music students and nonmusic students in terms of age, grade, I.Q., race, musicality, talent, teaching methods and materials, and environmental circumstances. However, he did not explain how or to what degree this was accomplished. He compared his group data in terms of high and low achievers and groups of brass and woodwind students with personality profiles by employing the chi-square test, sign tests, and t-tests.

The study was limited to secondary school students in New York City. A further limitation was that music students who played only band instruments were included. In addition it might be mentioned that the Watkins-Farnum Performance Scale neglects to measure some important musical factors--interpretation, phrasing, tone-quality, or the emotional valences of the testee toward music. The personality inventory does not measure personality characteristics directly, but rather infers profiles on the basis of the testee's preference at the moment.

Findings and implications. Dr. Kaplan concludes that for music counseling purposes "...The Manifold Interest Schedule provides some kind of significant information for 492 out of 588 students, or at least 84 percent of the students who elect instrumental music." The probability that a music student will fall into one of the profiles which serve to distinquish music from nonmusic students is 32 in 100.

Profiles "B" or "self-controlling," "D" or "intellectualizing," and "F" or "self-confident" "...without equivocation...characterize those students who engage in the study of instrumental music." Profile "F" was found to be most strongly characteristic of high achieving woodwind and brass students of both sexes. Profile "B" was found to characterize woodwind rather than brass students and girls who were high achievers. High achievers who were not music students seemed to resemble the "F" profile also. Profile "C" or "fearful" characterized achievers on woodwind instruments, and those who were low achievers on brass instruments.

The ability of The Manifold Interest Schedule to predict achievement in instrumental music was high for the people who "fell into a category which distinguishes between high and low achievers," however, the possibility of their "falling into a category" was relatively negligible. For counseling purposes the inventory proved slightly better than a chance prediction.

Comments. In his study Dr. Kaplan demonstrated an excellent understanding of research techniques and employed sophisticated statistics to treat his data. For this reviewer the study left much to be desired. Serious questions may be raised regarding the purpose of the study, the theoretical and philosophical basis on which it was formed, the conclusions reached, and their implications for music education and education.

It is not necessary in this review to go into great detail regarding the controversy that exists when personality inventories are administered and the scores obtained are used as indicators for a person's possible success in a particular occupation or skill. During the past ten years serious criticisms ranging from the overgeneralizing and superficial tendencies of the results obtained from at least 75 percent of the over 150 personality inventories available to suggestions in books on "How to Cheat on Personality Tests" have appeared in the literature. No one needs to be convinced that individuals differ greatly in their characteristic patterns of behavior. It has been pointed out by a psycho-lexical study of approximately 30 years ago that there were 17,953 "trait names" found in Webster's New International Dictionary. This figure represents about 4.5 percent of all the words in the dictionary which are used to distinguish the behavior of one human being from another.1/ Today most behavioral scientists are urging that no adequate assessment of human behavior can be made unless the individual is studied as part of an interactive group within a social milieu. Studies of small groups demonstrate that individuals selected at random and formed into groups behave in terms of the interactions which can be experimentally manipulated by the investigator. It has been shown that individuals interact in cooperative ways when group but not individual rewards are offered and in competitive ways under reversed conditions. These studies and many others point out that proper assessment can only be derived by studying individuals in an interactive situation. Personality traits are extremely difficult to measure since they tend to vary with the situation. A child may seem "turbulent" at an athletic contest, "intellectualizing" in a classroom, "fearful" in the presence of an aggressive individual, but "confident" and "assertive" when he seems to have an understanding and a "control" of the factors present in a situation. To carry the argument further one could say that most Americans learn many personality traits and turn them on or off as convenient, like water from a faucet. Although stability is demonstrated, personality characteristics are highly complex and differ with time and place.

The traits designated by Dr. Kaplan are greatly overgeneralized and certainly music and nonmusic students in the high school could not be adequately pigeon-holed into six profiles and treated accordingly. For those who work with music students it is clearly realized that the achievers cannot be designated by one general personality type. They can chiefly be designated as those who work hard, get the job done, and "make" music. The reviewer also doubts that it would be possible to classify successful musicians and music teachers into categories divided into six types. Personality traits can be more constructively employed by using them to describe the tendency of certain characteristics rather than to predict outcomes for individual people. As descriptive tools they may be employed as "ideal-type" constructs. Not enough is presently known of the creative musical personality or its characteristics to predict achievement.

There seems to be an inherent danger in the thesis that certain types of people should be selected for participation in music education programs. If education is viewed as growth, development or unfoldment, this type of policy would infringe not only on basic educational principles but prohibit education from taking place. Selecting persons with certain profiles would tend to create an "elite" which would perpetuate its own kind. The use of such tools would tend to inhibit and stifle most innovative effort, and the future of music education would possibly become stagnant since the possibilities of genuine creative effort would be negated through the selection of homogeneous participants. For a conservatory this system would be efficient; however, it is doubtful that the methods employed by big business, government, industry, and the military in selecting their personnel are "educative" to the individual person. Using this matter of selection of instrumental music seems highly dubious and unethical if the purposes, goals, aims, and values of public education are to be maintained. We live in a world which consists of multi-potentialities of cultural opportunity. Not every aspect of it can be encountered by each individual. Yet, if the goal of education is to broaden, to deepen, and to clarify as much of reality as possible, certainly the significant cultural element of music should not be relegated to those who possess only certain personality profiles. The reviewer doubts if we can or should separate boys and girls into the musical haves and have nots. The possibility still exists that the problem of numbers of students, trained teachers, and costs may be solved and "all the children of all the people" may participate to the limit of their desires in the music program.

Dr. Kaplan concluded that the data revealed the use of The Manifold Interest Schedule provides "some kind of significant information" for 84 percent of the music students. He did not indicate specifically what this "some kind of significant information" was. He also stated that music students could be distinguished from nonmusic students in 32 out of 100 cases. This is somewhat misleading and certainly not significant. This conclusion could be restated by saying that "some kind of significant information" could be found for 84 percent of the 32 out of 100 cases that "fall into" the designated categories. It is doubtful that this method of discrimination would be as adequate as bluntly asking each student if he was or was not a music student.

A serious question may be raised regarding the conclusions reached concerning the profile types. The profile designated as "self-confident" and "assertive" was found to characterize both high achieving music and nonmusic students. A question not answered is: Does the student become "self-confident" and "assertive" due to his achievements or is this trait part of his nature? Other criteria such as grades, I.Q. scores, or socio-economic-cultural backgrounds have been found to be reliable indicators of achievement and in many cases a basis for predicting future success. No comparison was made concerning how the investigator's technique was superior to these devices. To state that all low achievers are "fearful" does not adequately describe their condition. To conclude that girls who are low achievers and play woodwinds and boys (both high and low achievers) who play brass instruments are "turbulent" is a gross overgeneralization; but no more so than to conclude that high achievers on woodwind instruments and low achievers on brass instruments were "supersensitive." The most that can be said for these conclusions is that the researcher has developed six "stereotypes" to classify a complex variety of behavioral manifestations. Dr. Kaplan has fallen into the trap of greatly oversimplifying a very complex field of study.

Dr. Kaplan fell into the plight of some graduate students who, in efforts to meet deadlines, satisfy committees, go through the anxiety of completing a dissertation and get a degree, allow minor spelling and typographical errors to mar their otherwise demonstrated competencies.

One of the most important findings that resulted from the study was that the possible use of personality profiles could be used to discover latent musical potentialities in nonparticipating students. This topic needs further study and possibly other personality inventories would yield more significant results.

Footnotes

1. Allport, G. W , and Odbert, H. S., "Trait Names: A Psycho-lexical Study," Psychological Monographs, 47:211, 1936.

Kauffman, Henry M. A History of the Music Educators National Conference. George Peabody College for Teachers, 1942

Reviewed by Paul R. Lehman

Many of us would feel somewhat uncomfortable to have our dissertations reviewed more than 20 years after their completion, but Harry Kauffman need not share this uneasiness. His research was thoroughly carried out and well reported, and the intervening years have served to enhance the value of his work.

Kauffman's purpose was to study the development and influence of the MENC from its founding until the date of his writing. His principal sources included not only School Music, the Music Supervisors Journal (later Music Educators Journal), and the MENC Journal of Proceedings (later Yearbook), but also correspondence and interviews with many of the important personalities from the early years of the Conference. Some of these sources are no longer available today. Because of the specialized nature of his research and the length of his report, his treatment of the subject is more thorough than either that of Birge, who was present at Keokuk in 1907 and who has supplied invaluable first-hand information, or that of Molnar, who has excellently summarized two aspects of the subject in the Journal of Research in Music Education.

Kauffman has fulfilled his purpose very well; not only has he traced the development of the Conference itself, he has devoted separate chapters to associations predating the organization, to the history of the Music Education Research Council and to the constitutional development of the Conference. In addition, the documents he has assembled in appendixes include lists of officers; lists of personnel serving on the Executive Committee, the National Board of Control, the Council of Past Presidents, and the Music Education Research Council; a bibliography of Music Education Research Council reports; the constitutions and bylaws of 1910 and 1940; and even the report on P. C. Hayden's demonstrations at the Keokuk meeting and Hayden's reply. Although it seems strange, for example, to find Birge referred to as "a school music historian" or "a pioneer school music teacher" instead of by name, there are only a few allusions that serve to date the work.

In examining the history of the MENC, the reader cannot help but notice that, although some of the problems with which the Conference was especially concerned in the past now seem of no particular importance, there are a remarkable number of others that are still very much with us today. Perhaps the principal value of this study, however, lies in the fact that to a considerable extent the history of the MENC during the period of its existence is the history of music education in the United States. The meetings, publications, and activities of the Conference have tended through the years to mirror contemporary practices and trends in music education. From the pages of this report one can gain unique insight into the issues that have confronted the profession, the personalities that have dealt with those issues, and the thinking that has served to mold the professional organization and the music education program that we have today.

Knox, Charles C. The Orchestral Violin Tone.* Indiana University, 1964.

Reviewed by Bernhart G. Fred

The editors offer the following definitions of terms to supplement Dr. Fred's review:

> "Harmonic" refers to the fundamental frequency of a tone and an integral multiple of the fundamental frequency. Whenever the word "harmonic" refers to a high pitched tone produced by touching a violin string lightly at some nodal point, it is preceded by "natural" or "artificial," whichever is appropriate. The term "partial" is used in the sense of "harmonic partial," the equivalent of "harmonic," since there is no consideration of inharmonicity.
>
> The identification of the octave in which a pitch lies is done in the manner used by many physicists: Each pitch name has a subscript indicating which "C" it is or which "C" it is immediately above: C_1 indicates the lowest C on the piano, C4 indicates middle C, F$^{\#}$4 indicates the first F$^{\#}$ above C4, etc. All letters used as pitch names are capitalized.

The "harmonic theory" as formulated by Helmholtz states that the characteristic tone quality of an instrument is due entirely to the relationship among fundamental and upper partials, which relationship is supposed to remain unchanged no matter what the fundamental is. This theory and the "formant theory" as stated by Bartholomew, that the characteristic tone quality of an instrument is due to the prominence of partials in one or more regions of frequency which remains unchanged no matter what the fundamental is, have both served as the theory of acoustics upon which this investigation of orchestral violin tone has been based.

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Dr. C. C. Knox has designed this study with a view to obtaining information on the physical characteristics of the violin section tone in order to relate objective acoustical meaning to the subjective descriptions of timbre used by musicians.

"Although there are many published analyses of violin tones..., it was considered necessary to obtain a new and complete set of tone analyses of a violin section. The fact that the analyses in this study are of a violin section makes this study different from any previous study of which this writer has knowledge. Also, the sounds only--not the causes of the sounds--will be considered, setting this study apart from many previous analyses whose principal interest is the effect, on tone, of the construction of the instruments."

Methodology of Obtaining New Data

Using Pythagorian tuning as the basic tuning for the observations made in the study, spectographic analyses were secured of 270 unisonal tones played by 14 members of the violin section of the Indiana University Philharmonic Orchestra. The tones were played with ordinary bowing, "normal vibrato," and without mute. In addition Knox delved into: (1) numerous articles dealing with violin tone, the construction of the instrument, and other characteristics of the violin, (2) textbooks on orchestration and instrumentation, (3) books and articles about timbre in general, and (4) the timbre of orchestral string instruments specifically.

A number of studies have been concerned with tones produced on a single instrument as these tones were affected by the construction of the instrument. However, Knox chose to use the tones produced by a violin section in his investigation. The reasons given were that the violin is the basic instrument of the orchestra and that the tone most frequently heard in orchestral performance is one produced by a violin section. This study was only concerned with tones and not the causes of sound. The analysis of the timbre of each tone played was limited to number, intensity, and distribution of the fundamental and the harmonics. "It should be pointed out that absolute measurements of intensity would be meaningless here because intensity depends on the distance from the sound source and because the tones had passed through the adjustable gain controls of the tape recorder and the analyzer." Vibrato, though considered a factor of quality by some acousticians, was not a factor which affected the tones. In his preliminary studies Dr. Knox noted that vibrato became less clear on the spectrograph with the addition of instruments. He concluded that with five or more violins the effect of the vibrato disappeared. He also noted that it takes at least four violins to produce a satisfying collective unisonal effect.

The 14 violinists played the designated tones in unison in the form of a major scale, two scales on each string. These were taped for analysis on the sound spectrograph, a wave analyzer which graphically indicates the presence of tonal components lying between 0 and 8,000 cycles per second. One scale was begun on the open string and the second, a semitone higher. Each scale ascended an interval of a tenth from the lowest tone of the scale played on each of the strings, G, D, A, for a total of 60 tones while on the E string each scale ascended two octaves for a total of 30 tones. Each of these 90 tones was played piano, mezzo-forte, and forte. The attack and release parts of the tones were not analyzed. Only a segment of the sustained tone was isolated for analysis on the wave analyzer. In addition to the analyses of the above-mentioned 270 tones, the typical string timbres of the string family--30 muted tones, 23 Sul Tasto, 16 natural harmonics, 16 artificial harmonics--were played and analyzed.

Timbre Characteristics Common to All Tones

Tones played on different strings or at different dynamic levels vary in tone color, but all tones of a violin section are distinguishable from tones played by a group of clarinets, for instance.

Considering the number, intensity, and distribution of partials, the number of harmonics is large because harmonics are present in most tones up to 8,000 cps. It was found that harmonics of relatively great strength are more likely to occur among the first five harmonics and increasingly less likely in higher harmonics.

An area of strength from B_6 (1,980 cps) to F_7 (3,520 cps) was found to exist. Since it exists in all tones on all strings, at all pitch levels, it has been designated the "principal formant" of the violin section tones. This formant gives the violin tone strength and fullness. Other investigators have arrived at similar conclusions.

The chief determinant of harmonic strength was found to be the pitch rather than the order of the harmonics.

Timbre Characteristics of Individual Strings

G string. The greatest relative harmonic strength is found in the lower harmonics with decreasing relative strength above the lower harmonics. Below C_4 the tones possess weak fundamentals.

The timbre of the G string has been described as "full, rich and rather dark," "masculine and powerful," and "harsh." Upper tones are "curiously intense." The G string has a formant of its own, C_4 to $E^b{}_5$, and includes the first and second harmonics of every tone played. The upper harmonics have proportionately more strength at high dynamic levels.

D string. Below G_4 there is an area of harmonic weakness and in the area above B_6 the relative average strength of the harmonics decreases. The upper harmonics have more strength at forte and mezzo-forte than at piano.

The timbre descriptions given to the D string are: "mellow," "less dark and full than the G string." These terms support Riemann who states that "the genuine tone, the chest voice of the violin, is...in the D string."

A string. Most of the harmonics below B_6 are comparatively weak. The strings strongest area is from B_6 to $E\flat_7$. In timbre descriptions it is often classed with the D string, but is "sweeter," "a little more placid and flutelike." In both the D and A strings the fundamentals are fairly strong. At times the fundamental is the strongest harmonic in the tonal spectrum.

E string. A tone on the E string is most likely to have strong harmonics among the first five. From E_5 to A_5 there is a comparative area of weakness; whereas, from $B\flat_6$ to $C\#_8$ the strongest and broadest area is found. This is the "principal formant." If compared with the violin tone as a whole, it is broader and stronger. The E string has been described as "brilliant" or "penetrating."

A wider range of dynamics is possible on the G and E strings possibly due to their position as outer strings. The dynamic change, though it probably does not change the timbre, may well contribute to the characteristic sounds of these strings in performance.

Summarizing this section of the investigation, Knox observed that the principal formant of the violin section tone is essentially the same for all four strings. The strength of this formant seems to vary inversely with the distance between it and the fundamental of a tone.

Characteristics of Typical String Timbres

Muted tones. These tones, played at only one level of loudness, *mezzo-forte*, were found to have proportionately more strength in the fundamental and less strength in the third harmonic and above. The area in which muted tones have their greatest average strength is primarily accounted for by the first and second harmonics while for nonmuted tones it is at the third harmonic and above. In no case is the number of partials reduced, but the intensity of higher partials is reduced and the fundamental is noticeably strengthened.

Sul Tasto. This special timbre was analyzed with a small sample not precisely controlled. This bowing produces a "less vibrant," "dull," "feeble and subdued" tone. When making a comparison of the nonmuted tones played sul tasto, and the same tones played with a mute, it was noted that the relative strength of the upper harmonics is increased in sul tasto, while a mute reduces the relative strength of the upper harmonics despite the fact that both tend to reduce the loudness of tones.

Natural and Artificial Harmonics

The distinctive qualities of natural and artificial harmonics are probably due to the lack of vibrato and the relatively high pitches.

The acoustical structure of natural harmonics is almost the same as that of the stopped tones. Both kinds of harmonics are similar to normal tones, and have been characterized by the terms "cold," "brilliant," "clear," and "penetrating."

This investigation has also indicated that variations in the relative harmonic strengths of tones are due to the use of various dynamic levels, the mute, and sul tasto playing.

Summary and Conclusions

Dr. Knox's investigation indicates that the violin section tone contains a large number of partials.

When the relative strength of each of the tonal components was measured, tabulated, averaged, and graphed, this information served to indicate that the lower harmonics are relatively strong while higher partials are increasingly less strong.

This study has confirmed the work of acousticians who state that the area from 1,800 cps to 3,000 cps (B6 to F7), gives strength and fullness to the violin tone. This area, called the "principal formant," varied in strength and extent from string to string. It was also noted that this variation was due to the range of tones played on each string. Distinctions between similar tones played on different strings were found in areas other than in the principal formant.

Harmonic strengths differed from string to string and were not solely dependent upon the range of tones. In general the lower the string the greater was the emphasis on areas below the principal formant; the higher the string the greater the emphasis on the area above the principal formant.

"Carryover" of tone from one string to another is accomplished with evenness and is evident in the large number of partials present in the violin section tone and in the similar shape and typicalness of each string tone.

The special timbre of the D string is due to the prominence of the principal formant and the comparative evenness of strength in other pitch areas.

Areas of strength (formants) and areas of weakness relate as well as differentiate the G, D, A, and E strings and most of the descriptive terminology for the various timbres can be correlated with these pitch areas.

Recommendations

1. Similar studies should be made using other sections of instruments and instruments alone.

2. An endless study of combined timbres could be begun.

3. An investigation of the timbres used in orchestral accompaniments of voices should be considered because the timbre of a group has as much importance to vocal clarity as does the loudness of accompaniment.

4. Tones produced by _pizzicato_, _spiccato_, and _col legno_ should be studied also.

5. Future investigations of the characteristics of violin construction and vibrations which are the causes of timbre should include analyses of vibrations of the G, D, A, and E strings when separated from the violin body.

6. Knowledge of the vibrations of each string and of sympathetic vibrations among the strings combine with the presently available knowledge of body resonance could provide a different approach to acoustical data similar to that assembled in this study.

Comments

Knox has conducted a thorough and valuable investigation of an area which is often discussed on the basis of empirical evidence rather than on the results of scientific research.

He followed accepted methodology of research by conducting a preliminary study and by delving deeply into related literature about many aspects of timbre and terminology, both of which enabled him to design an effective research project within the limitations he has set down.

It is well known that a number of studies have been made in connection with individual instruments and the causes of tone; whereas, this study has adopted an innovative feature--the orchestral violin tone--as the basis for study of the objective aspects of tones and the related subjective terminology.

The objective analyses of steady state tones recorded in the numerous charts, graphs, figures, and tabulations give clear evidence that the violin section tone has a characteristic shape. (See page 89) Areas of strength and weakness of the fundamental and partials are clearly evident and show a remarkable similarity in the structure of the tones. The "typical violin section tone" found on the D string has an unusual amount of evenness throughout the string.

The need for replication of this study is obvious and possible by using the proper equipment and Knox's clearly presented procedure for obtaining his data.

Replication ought to deal with the analyses and comparisons of tones of the viola, cello and contrabass as individual instruments and as sections. Analyses could seek to obtain a characteristic section tone for each group of instruments and comparisons could be made for the purposes of determining the timbre similarities and differences between (1) the same tones on other instruments, and (2) the same tones on different strings on the same instrument.

Some Questions for which Answers Might be Sought

1. How would the timbre of a violin section tone appear in the spectrum if a group of high school students were playing? The same questions could be applied to the viola, cello and bass sections as well.

2. String teachers have been known to speak of "string tone" as having special timbre qualities. Of what does it consist? What characteristic features does it possess?

3. What role does the quality of instrument play in the study of timbre? Information in this area might serve to guide teachers, parents, and students in the purchase of adequate instruments.

4. To what extent does or does not the acoustics of a rehearsal room, the stage, the concert hall, and the soundproof studio affect timbre of string instruments?

5. Would the timbre spectra of the two inner strings be different if they were used as outside strings? In like manner, would the timbre of the two outside strings be different if they were used as inside strings?

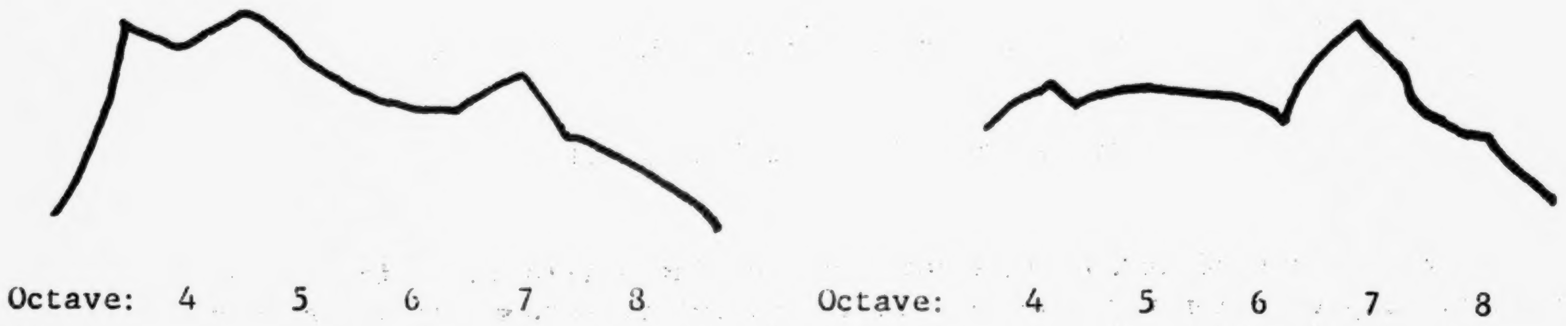
6. Do the instantaneous tones produced by pizzicato, col legno, and spiccato each have its own typical timbre spectrum? Does the addition of instruments affect the spectrum? If so, in what manner? Where is the ideal place to pluck the string to produce a resonant tone or a dry tone?

7. What is the minimum number of instruments of each section needed to produce a satisfying collective unison tone?

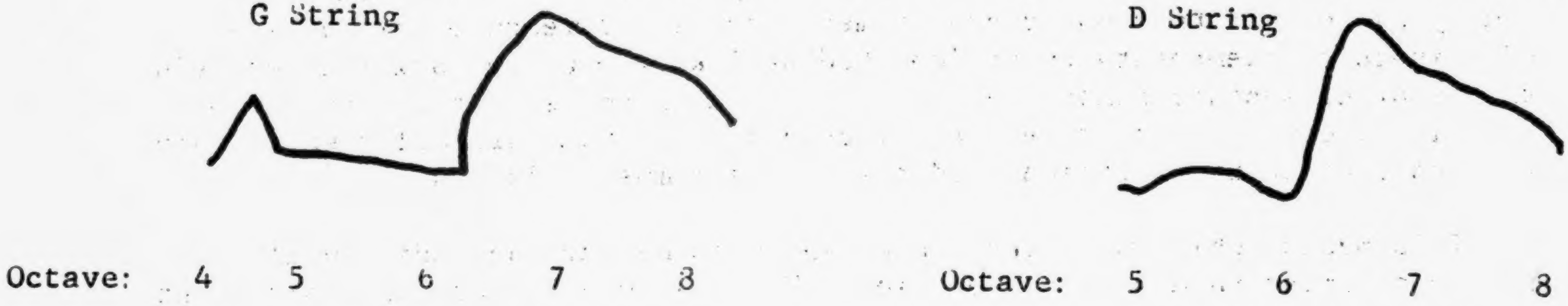
8. Does vibrato on the viola, cello, and bass tend to disappear or become more prominent as instruments are added?

It appears to the writer that Knox achieved what he set out to do--to isolate the violin section tone and to determine whether this tone had any peculiar timbre characteristics which differ from those of a single instrument and to compare the timbre of these tones with the subjective terminology used by musicians to describe the timbre of each string. Knox has been highly successful in this endeavor.

This study is recommended for reading and study by string teachers, composers, arrangers, and conductors.

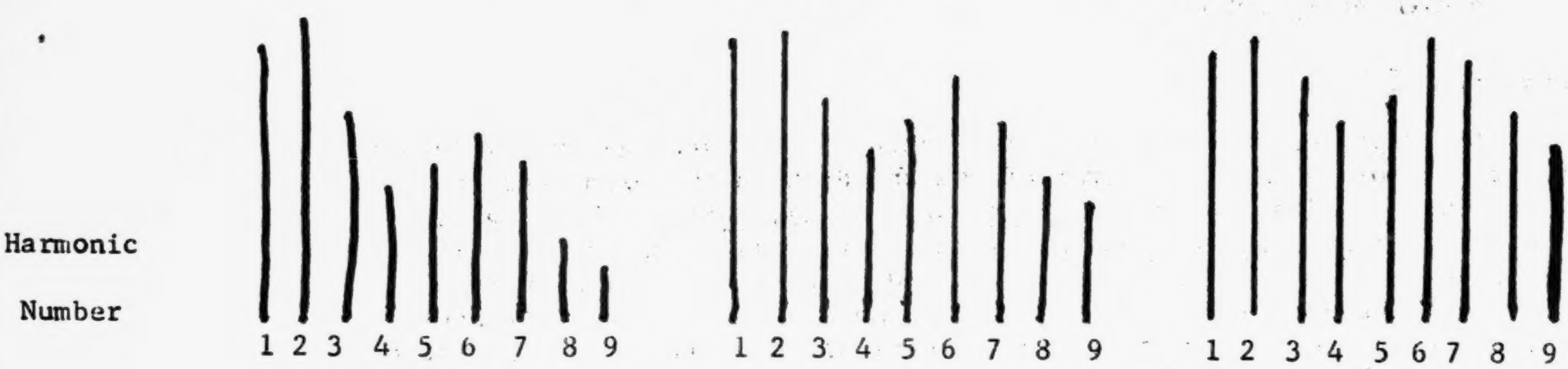


G String D String

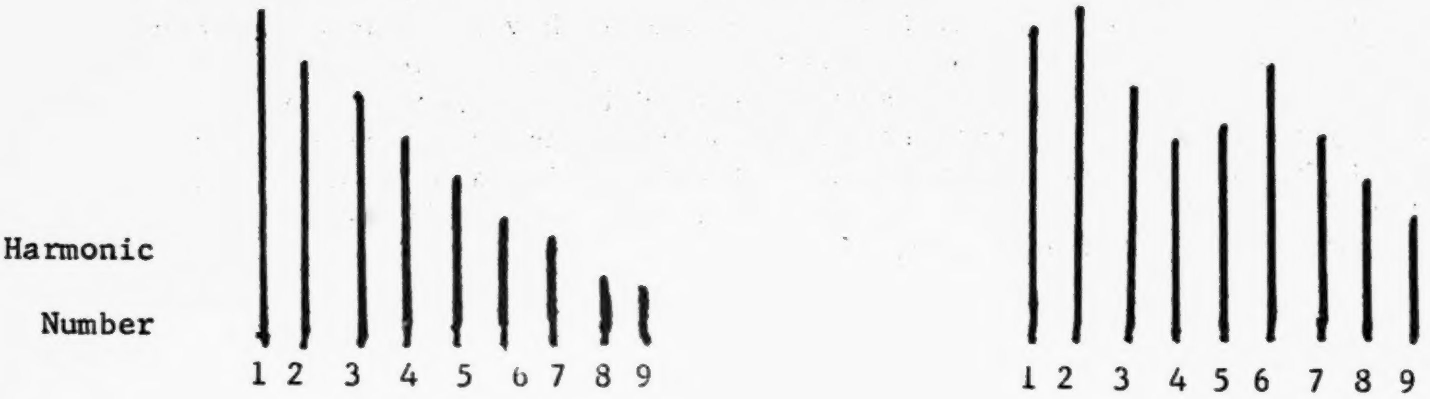


A String   # String

Figure 28 Average Relative Harmonic Strength (Simplified) of the Individual Strings



Piano Mezzoforte Forte



Muted, Mezzoforte   Sul Tasto, Piano

Figure 29 Variations in the Relative Harmonic Strength of a tone caused by Different Dynamics, by the Mute, and by *Sul Tasto* Bowing.

Knuth, Mrs. William. The Alice Snyder Knuth Achievement Test. San Francisco State College.

Reviewed by Mrs. William Knuth

There is a need today to measure the reading skills in music and the musical comprehension which an elementary school classroom teacher should possess in order to teach music to boys and girls in the classroom. The primary purpose of this music achievement test is to measure the college and university elementary education students' knowledge and skill in certain aspects of elementary school music. This study also assists the professors in music education to measure the effectiveness of the curriculum which they offer to elementary education students in basic music classes.

This music achievement test is designed to measure an individual's ability to understand musical notation. The test may be used as a placement test at the college and university level to determine the music background of elementary education majors, and may help the music education staff to determine whether or not these students need to take a basic music fundamentals course, prerequisite to an elementary music methods course. The test may be useful also in measuring the achievement of music majors at both the secondary school and college levels. The classroom teacher may find this test helpful in the measurement of the musical achievement of boys and girls in the elementary school.

Preparation of the Test

In preparing this measuring instrument, the investigator utilized source materials for the music program of the children in the elementary schools. Three music series, Music for Living Series (1), Together We Sing Series (3), and Our Singing World Series (2), were analyzed as to rhythmic, melodic, and harmonic content, phrase construction and repetition, musical terms and symbols, listening activities related to music reading and comprehension, the use of major and minor modes, and, in general, the skills and understandings related to the over-all music program in the public schools.

From the folk song material contained in the music series and from original musical themes of the investigator, two hundred and eighty-two items were constructed. Two hundred and fifty-six items were chosen to be used in the preliminary forms of the music achievement test. Pilot studies were made at the University of Oregon with students in the music education classes. After analyzing the results of the six trial runs, seventeen items were discarded. The test was then arranged into two equivalent forms with one hundred and forty-one items included in each form.

The test forms were edited for administration purposes by means of filmstrips and sound tapes. Two schools were chosen for the study, the University of Oregon and San Francisco State College. Both forms of the test were administered to three hundred eleven (311) elementary education majors, and sixty-four (64) advanced music majors at San Francisco State College; at the University of Oregon the test was administered to sixty-nine (69) music education students and beginning music theory students. The data gathered were treated statistically to determine the reliability of the test forms. An item analysis of the test was made with the result that five test items were eliminated from each form.

Description of the Test

There are two equivalent forms, Form A and Form B. The test is divided into four parts:

Part I	Listening and Seeing (53 items)
Part II	Listening (63 items)
Part III	Musical Comprehension (35 items)
Part IV	Tonal Memory (10 items)

The basic elements of music, rhythm, melody, and harmony, are not separated in this test, but appear as they normally do in music. Test items in the area of rhythms are presented in a melodic context. Those test items which involve harmony are derived from the problem of choosing chords to accompany a simple given melody.

The entire test is based upon real and natural music situations. Themes from folk song material sung by children in the public schools constitute the main source of the test item material. The problems found in the test items are everyday occurrences in the elementary school music program. All items which are meant to be listened to are played on the piano. The directions are given by a narrator. Both the test items and the spoken directions are heard through the medium of a magnetic tape recorder.

The content of this test uses appropriate song material to measure the musical understanding of the subject as he reads music.

Part I. Listening and Seeing, 53 items. Item subdivision includes:

Recognizing the last note of a phrase
Recognizing tones of the tonic chord
Recognizing diatonic and chromatic melodies
Recognizing sequences
Recognizing rhythm in melodic content
Recognizing rhythmic and melodic content
Selecting harmony to accompany a simple melody

Part II. Listening, 43 items. Item subdivision included:

Recognizing contour of melody
Recognizing tonic chords
Recognizing the key tone
Recognizing octave skips

Part II. (Continued)

Recognizing how a melody moves
Recognizing similar phrases
Recognizing duple and triple meter
Recognizing major and minor melodies

Part III. Music Comprehension, 35 items. Items are of an analogy type to test the subject's comprehension and understanding of music as he reads.

Part IV. Tonal Memory, 10 items. Item subdivision includes:

Recognizing the notation of familiar melodies

The test items for the two equivalent forms are recorded on a tape and filmstrip. Both Form A and Form B are included on the filmstrip. The music and directions for the test items are recorded as follows:

Form A.		Form B.	
Part I	1 tape	Part I	1 tape
Part II	1 tape	Part II	1 tape
Parts III and IV	1 tape	Parts III and IV	1 tape

Working time for each form of the test is approximately sixty-five minutes. This includes the distribution of the IBM score sheets and any preliminary directions, filling in of information at the top of the score sheets, and the collecting of these score sheets.

The test may be given in its entirety or in separate parts, or in a combination of parts. The approximate timing for each part is as follows:

Part I	24 minutes
Part II	22 minutes
Part III	12 minutes
Part IV	4 minutes

Part I may be given alone, or it may be followed at once by Part II. Parts III and IV are easily combined. Form A may be given first, for instance, in the beginning of the year or semester. Form B may be given toward the end of the year or the semester.

The test may serve as a means of discovering those students who have sufficient music background to have the basic music fundamentals course waived in their college training.

A manual is available with directions for administering the test and scoring.

Reliability

The coefficient of reliability between Form A and Form B of the test is high. The reliability coefficient for the two forms administered to three hundred eleven (311) elementary education major students at San Francisco State College was .993. In administering and scoring the test for sixty-four (64) advanced music major students at San Francisco State College, the reliability coefficient for the two forms was .998.

Test data for 311 students were utilized in establishing the reliability coefficient between Form A and Form B of the test. This coefficient was calculated from raw scores.

TABLE I

CORRELATION BETWEEN THE SUMS OF THE SCORES OF FORM A AND FORM B FOR ELEMENTARY EDUCATION MAJORS

N = 311

Alice Snyder Knuth Music Achievement Test Form A and Form B	r = .993

TABLE 2

CORRELATION BETWEEN THE SUMS OF THE SCORES OF FORM A AND FORM B FOR ADVANCED MUSIC MAJORS

N = 64

Alice Snyder Knuth Music Achievement Test Form A and Form B	r = .998

TABLE 3

CALCULATION OF MEAN AND STANDARD DEVIATION FOR THE ELEMENTARY EDUCATION MAJORS

N = 311	Mean	S. D.
Alice Snyder Knuth Music Achievement Test Form A	74.65	18.88
Alice Snyder Knuth Music Achievement Test Form B	81.46	19.64

TABLE 4

CALCULATION OF MEAN AND STANDARD DEVIATION
FOR ADVANCED MUSIC MAJORS

N = 64	Mean	S. D.
Alice Snyder Knuth Music Achievement Test Form A	110.14	12.09
Alice Snyder Knuth Music Achievement Test Form B	110.46	11.17

Validity

During the construction of this test, the investigator was concerned with content validity, the amount of agreement between the test item content and the content of the music books currently in use. The items in the test are typical of the song material used by the children in the public schools. Many excerpts from folk songs are used. The content validity of this test may be examined by checking the test items against courses of study, textbooks, or curriculum guides prepared for teachers in the elementary school, and for teacher training in the colleges.

Norms

The Alice Snyder Knuth Music Achievement Test was planned for use in the college elementary education program. Percentile norms were computed directly from the normal probability curve. Data were gathered from the test results of three hundred eleven (311) matched cases of elementary education majors. Norms derived fromthe normal curve correct the chance error of measurement reflected by the small sample (311). The variations from the normal probability curve are due to chance occurrence; they result from the small sample of three hundred eleven (311) cases. The norms based upon the normal probability curve are given in Table 5.

TABLE 5

NORMS BASED UPON THE TOTAL COMBINED SAMPLES OF 622 ELEMENTARY EDUCATION MAJORS, SAN FRANCISCO STATE COLLEGE FOR THE ALICE SNYDER KNUTH MUSIC ACHIEVEMENT TEST

For Form A and/or Form B (combined results for both forms):

Total = 622
Mean = 78
Standard Deviation = 18
Range = 84
(99%ile - 1%ile)

Percentile	Raw Scores
99	120
98	114
95	109
90	101
85	97
80	93
75	90
70	87
60	83
55	80
50	78
45	76
40	73
30	69
25	66
20	63
15	59
10	55
5	48
2	42
1	36

The above norms were derived from the sample of three hundred eleven (311) matches cases, elementary education majors, San Francisco State College. The test of significance of the difference between means for Form A and Form B indicated that they could be combined for purposes of deriving norms.

Present Use of the Test

The Alice Snyder Knuth Music Achievement Test is being used every fall and spring semester and summer session as a placement instrument for elementary education majors in music education courses at San Francisco State College. Those who pass the test are excused from taking the required music fundamentals course, and are placed in Music Ed. 101, Elementary Music for the Classroom Teacher, the music methods course. Those who fail the course are required to take Music 8, Basic Music for the Classroom Teacher.

The music achievement test is given frequently toward the end of the semester in Music 8 classes to measure how well students are grasping the content taught in this music fundamentals course. Toward the beginning of the semester of the Music Ed. 101 classes, the test is frequently given to measure how well the students are prepared in their prerequisite basic music work and to determine how much emphasis on music reading needs to be continued in the music methods course.

References

1. Mursell, James L., and others, Music for Living Series. Morristown, N.J.: Silver Burdett, 1956.

2. Pitts, Lilla Belle, Glenn, Mabelle, and Watters, Lorrain E., Our Singing World Series. New York: Ginn, 1949-1951.

3. Wolfe, Irving, Krone, Beatrice Perham, and Fullerton, Margaret, Together We Sing Series. Chicago: Follett, 1956.

Biographical Note:

Alice Snyder Knuth is Associate Professor of Music at San Francisco State College, where she has been teaching students in music education and creative arts education since 1952. She has a background of teaching and supervising music in the public schools at the elementary, junior and senior high school levels. From 1948-1952 she was Music Consultant for the San Bernardino County Schools in California. From the State University of Iowa she received the Master of Arts Degree in music; she received the Doctor of Education Degree from the University of Oregon in 1958. Her doctoral dissertation at Oregon was "The Development, Construction, and Standardization of a Test of Music Achievement."

Krueger, Harold E. A Critical Analysis of the Minnesota District and State Band Contest-Festival System with Implications for its Improvement.* Colorado State College, 1964

Reviewed by Lawrence Intravaia

Introduction

According to the author, the study was undertaken with the belief that a critical analysis of the band contest-festival system in Minnesota would serve as a means for future improvement of its present system and ultimately would bring a higher degree of musical development to the boys and girls of the public schools. Such an improvement could be attained only through an examination of the present practices and an evaluation of individual preferences by means of a research procedure. Data was presented in terms of the aims and objectives of the Minnesota Public School Music League with particular concern for the immense amount of time expended by students, directors, and administrators in the functioning of the contest-festival system.

The author presents reasons for limiting the study to the state of Minnesota but goes on to suggest that the findings will certainly be of interest to anyone concerned with the contest-festival situation, with the hope that these findings might be of value in analyzing other similar situations.

Terminology

Since many states assign individual meanings to describe inter-school activities, the author offers the following definitions as used in the study:

1. Contest. An event which evaluates the performance of solos, ensembles, and/or large groups in a competitive atmosphere for the specific purpose of ranking.

2. Contest-festival. An event which evaluates the performance of solos, ensembles, and/or large groups in a competitive atmosphere for the specific purpose of receiving a rating.

3. Festival An event which evaluates the performance of solos, ensembles, and/or large groups but with no ranking or rating system.

4. Ranking system. A system whereby contestants are placed in numerical order as a result of a particular performance; the top performance would be placed first, the second would be second, and so forth.

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*Order number 65-240, microfilms $4.00, xerox $13.95

5. Rating system. A system whereby performers and performing groups receive an evaluation of Superior (I), Excellent (II), Good (III), Fair (IV), or Below Average (V).

Statement of the Problem

The purpose of the study was to determine the organizational procedures of interschool band contests and festivals and the procedures favored by the band directors and adjudicators of Minnesota. The study used the present contest-festival system as a reference point. The study attempted to answer the following questions:

1. What are the current practices of participant and nonparticipant schools relevant to instrumental music competitive and noncompetitive events at the district level of competition?

2. What are the favored plans of public school instrumental music directors and adjudicators relevant to competitive and noncompetitive events at the district and state levels of competition?

3. For what reasons do certain schools elect not to join the Minnesota Public School Music League, governing body for all Minnesota music contests?

4. In what ways can the contest-festival system be improved in order to have a more widely accepted procedure and to better meet the objectives of a good music education program?

In order to make the analysis of the system as complete as possible, the following areas were evaluated:

1. Objectives and basic philosophy.

2. State administration.

3. District administration.

4. Rating system.

5. Selection of adjudicators.

6. Adjudication form.

7. General mechanics (qualification, classification, and so forth).

Five plans were presented to each respondent for consideration. The form of each plan was predetermined by the writer and the respondent was asked to give a positive indication of his reaction to each plan under the stated situation. The five plans presented were as follows:

Plan A: An event which evaluates the performance of solos, ensembles, and/or large groups in a competitive atmosphere for the specific purpose of receiving a rating (a competition-festival).

Plan B: An event which evaluates the performance of solos, ensembles, and/or large groups in a competitive atmosphere for the specific purpose of receiving a ranking--one 1st place, one 2nd place, one 3rd place, and so forth (a contest).

Plan C: An event which evaluates the performance of solos, ensembles, and/or large groups but with no rating or ranking system (a festival).

Plan D: An event which evaluates the performance of solos, ensembles, and/or large groups with a rating system, but in addition is culminated by a large massed or select band experience (a combination event).

Plan E: The respondent does not agree to interschool music activities, but instead prefers activities produced in and for the local school only.

Collection of the Data

Data was collected by means of a questionnaire. The questionnaire was constructed by the author with ;the help of selected members of his committee and 30 participants of a pilot study. The contest-festival types and problems statements were determined, after a thorough study of related literature, from writings of authorities in the field of music education, from similar questionnaires, from those problems noted by the faculty of the Department of Music at Colorado State College, and from the author's own experience as an adjudicator in Minnesota.

The author states that the form of the questionnaire was predetermined by himself in such a way that the respondent could give a positive response or a relative evaluation depending upon the information requested.

Selection of the Population

The respondents consisted of 460 Minnesota high school band directors and 100 adjudicators who were associated with the contest-festival system. The total participants (560) were as inclusive of the total population of the state as it was possible for the author to determine.

Organization and Treatment of the Data

The total number of questionnaires was 560. Total percentages and specific findings were based on a return of 480 or 80 percent. Of the 460 high schools contacted, 56 had band directors who also adjudicated. It was decided, therefore, to group the respondents into three classes: band directors, adjudicator-directors, and adjudicators. These three groups constituted the basis for the reported findings of the study.

Conclusions

The author was able, in part, to draw certain conclusions related to the contest-festival system in Minnesota through an analysis of the status, background, responsibilities, and opinions of the three respondent groups. The realization that the respondents were in remarkable agreement on most issues indicated to the author that the capacity of the respondent as director or adjudicator was not in such conflict as to cause serious trouble to the system. A few of the specific conclusions of the study follows:

Contest-festival situations. (1) Local tradition and pressures strongly favor Plan A. Also, the extra time needed to organize, develop, and carry out the massed band experience outweigh the possibility of an improved educational experience for the student. (2) Director respondents were in favor of Plan A and Plan D under present circumstances. (3) School size does not seem to be a contributing factor in determining the organizational set-up of the contest-festival system.

Objectives and basic philosophy. (1) The contest-festival is a sound educational concept and needs to be developed as a part of the school music curriculum. The demand for excellence need not hamper or limitother school activities through such things as overemphasis and excessive time of the band program. (2) The performance of music for the individual and the group, as well as the teaching affectiveness of the individual instructor, is improved by active participation in competitive events. (3) Competition in music is compatible with aesthetic principles both from the standpoint of the performer and the listener. The competitive spirit is valuable also in the general development of the student; this includes his grasp of good sportsmanship and his ability to take criticism. Competition need not result in overemphasizing the abilities of the talented and degrading the less talented. Its judicious use can contribute to the development of both types of students. (4) The true purpose of the contest-festival system is not entirely clear in the thinking of the layman.

The author offers additional conclusions in the areas of state administration, district administration, the rating system, the adjudication form, selection of adjudicators, and general mechanics.

Critique

The bulk of the text is devoted to an analysis and interpretation of responses relative to contest-festival situations and to specific problem areas of the contest-festival system in Minnesota. This is accomplished through tabulated tables (91 in all) of responses and percentage factors of the various items in question. The pro and con questions of the merits of the contest-festival system are usually "discussed" by band directors in rather broad, general, and sometimes vague terms, often without agreement on any concrete situations. The author is to be commended for making a deliberate effort to get to the "heart" of the problem by dividing these broader problem areas into their more minute component factors.

The reviewer is in agreement with the author that many of the problems described and analyzed here are equally applicable to many other states. It was refreshing and surprising to read the amount of agreement on some of the more controversial areas.

The reviewer must confess that page after page of tables along with their interpretation and analysis became a bit tedious to read. If there is any outstanding weakness in the study it is that the author did not fully answer the question, "In what ways can the contest-festival system be improved in order to have a more widely accepted procedure and to better meet the objectives of a good music education program." Perhaps the reviewer was anticipating some startling recommendations to be made in the author's conclusions concerning the contest-festival system. This expectance was due to the words "critical analysis" in the study's title. The reviewer concluded that the "critical analysis," which was to have suggested solutions to the many problems of the contest-festival system, had not come off.

STUDENT DROP-OUT IN INSTRUMENTAL MUSIC IN THE SECONDARY SCHOOLS OF OAKLAND, CALIFORNIA* Stanford University, 1964

Edwin Carl Kruth

Reviewed by LAWRENCE J. INTRAVAIA

THE PROBLEM

According to Kruth, instrumental music teachers in secondary schools throughout the United States are becoming increasingly concerned with the fact that many students who have started instrumental music in the elementary or junior high schools do not continue to elect instrumental music through the senior year of high school.

The high percentage of mortality in the secondary schools, as estimated by teachers and music administrators, becomes an even more crucial factor in education when teachers leave the music teaching profession rather than battle the problem of student drop-out. The author feels that if drop-outs have increased, an investigation of the problem appears to be exceedingly important to determine possible solutions.

Kruth writes that the following questions led him to investigate the problem: (1) Why did the instrumental music program grow consistently in scope, size, and stature for approximately forty years, only to level off and begin to decline in recent years?; (2) If there is a serious drop-out problem, as is indicated in the available literature, does this mean also that the status of music in the public schools is on the decline?; (3) The majority of drop-out studies are limited in character and investigate only the status of the drop-out students. Why not examine students who remain in instrumental music as well?

While many instrumental music teachers are concerned about the drop-out problem only to the extent that it affects their particular program, Kruth feels that the problem is considerably more profound; its implications and seriousness for the music profession and community are extensive. With a serious drop-out problem in the secondary schools, the number of prospective instrumental music teachers and professional musicians would eventually decrease. In contrast to the rising general enrollments in colleges and universities, the music departments would tend to grow smaller.

At the time of Kruth's writing, only one major study based on documentary evidence in the secondary schools was available.[1] The lack of sufficient and representative data concerning drop-out in instrumental music prompted a questionnaire study designed to investigate in depth the entire instrumental music environment in one city in the San Francisco Bay Area. The City of Oakland, California was selected for the study because of its long and continuous history of music in the public schools and because of the degree of interest in the study and support offered by the teachers and administration.

Kruth used four sources of data: (1) questionnaires for senior students who dropped out of instrumental music; (2) questionnaires for senior music students who continued; (3) a factual survey of both groups of students, including data from students' personnel files in guidance offices of their respective schools; and (4) a teachers' questionnaire, designed to provide pertinent data about the Oakland Public Secondary Schools, teachers' techniques and methods in instrumental music activities in the schools, facilities, and general method of operation.

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* Order number 65-2863, microfilm $2.75, xerox $9.45.

[1] Hal Bergen. A Study of Drop-outs in Instrumental Music in Five Selected High Schools in Michigan, unpublished Doctoral Dissertation, Michigan State Univ., 1957.

Data from the students' questionnaires was analyzed and compared to determine the significance of the difference between answers by regular music students and the drop-out students. The technique used for the comparison was Zubin's "Nomograph for Determining the Significance of the Difference Between the Frequencies of Events in Two Contrasted Series or Groups."[2] A comparative study was made using the Zubin Nomograph to determine the difference between the music students and the drop-out students, and the related influence of school and home environment.

The study was organized in four parts:

1. A statement of the problem and a review of literature (Chapters I and II) relating to the drop-out problem in instrumental music in the United States.
2. The method used to investigate the problem, the statistical procedures for handling the data, and a description of the area investigated (Chapters III and VI).
3. The findings of the questionnaires as they relate to degree, nature, and causes of drop-outs (Chapters V and VI).
4. Summary, conclusions, and recommendations (Chapters VII and VIII).

FINDINGS

The study is well supported by tables (26 in all) indicating the results and analyses of the questionnaires described above. Where applicable, a comparison according to the Zubin Nomograph appears in some tables. Two charts explaining the use of the Zubin Nomograph are offered. The Appendix contains sample copies of the questionnaires used to obtain data for the study.

The aims of the study were to assess the degree, nature, and causes of drop-out in instrumental music in the secondary schools of Oakland, California. Sixteen questions were designed to obtain the data. The following is a summary of the answers to the sixteen basic questions:

Degree:

1. Ninety-two (46.4%) of the instrumental music students dropped out before graduation from high school.

Character:

2. Mortality was higher in strings and woodwinds than in percussion or brasses.

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[2] Joseph Zubin. "Nomographs for Determining the Significance of the Differences Between the Frequencies of Events in Two Contrasted Series or Groups," Journal of the American Statistical Association, Vol. 34, 1939, pp. 539-44.

3. Only twenty-five per cent of the drop-out students re-elected instrumental music after dropping out. Seventy-six per cent of the music students elected music each consecutive semester.
4. Twenty-nine (31.5%) of the total number of drop-outs occurred between ninth and tenth grades.
5. Intelligence was a factor to be considered in assessing the nature of the drop-out. Drop-out students had a higher median I.Q. than music students.
6. The grade level in which a student started instrumental music was not a significant factor in drop-out.
7. Students who dropped out of instrumental music did not receive lower grades in instrumental music than those who remained in instrumental music.
8. A significantly higher percentage of girls dropped instrumental music.
9. A significant difference was not revealed between the drop-out students and music students in the number who studied privately.
10. Teachers' capability in teaching techniques and counseling was reflected in drop-out.
11. Teachers' efforts to develop a sound program of performance appeared to have a positive effect on administrative support.
12. School teachers did not report close cooperation with private teachers; however, the private teachers were not negative about their students performing in school groups.
13. A significantly higher percentage of fathers of drop-out students as compared to music students were classified as skilled workers. 33.6 percent of the drop-outs as compared to 19.8 percent of the music students had fathers in the skilled workers category. A comparison of the education, observable attitudes and nationality revealed no significant differences between the parents of the two groups of students examined.
14. The drop-out students devoted significantly more time to non-music clubs and extra-curricular activities.
15. A significant number of drop-out students found it more difficult to schedule instrumental music in their program when they entered high school.
16. A significant percentage of music students reported that cost had a negative influence on their musical progress.

In addition to these summaries, Kruth includes comparisons and analyses of data obtained from the questionnaires used in the study.

CRITIQUE

Kruth is to be congratulated for an excellent job on a study involving a subject which is fast becoming a serious problem in public school music programs. The reviewer is in agreement with Kruth's statement that his study is broader and more thorough in depth than previous studies devoted to the same problem. His approach, style, and procedures are thorough, scholarly, and, in contrast to the Bergen study, quite objective (especially with a highly subjective topic). Whereas both Bergen and Kruth questioned drop-out students and those who remained in the program, Kruth also questioned teachers concerning drop-outs and attempted to obtain a total picture of the students' musical environment in the school and home. Kruth suggests that the lack of data regarding the two latter factors constitutes a basic weakness in Bergen's study.

The findings by both studies regarding reasons why students drop out of instrumental music programs indicate a surprising amount of agreement. This leads the reviewer to feel that, while local situations required varying criteria, the similarity in the findings implies a pattern in the causes for drop-outs in instrumental music programs. This is interesting in light of the geographical difference between the locales involved in the two studies. The reviewer does not intend to imply that such a pattern is positively established simply because two studies revealed some similarities in their results. If, however, future studies of the same problem in other localities indicate similar findings, this information will be of great importance to instrumental music teachers who are battling the drop-out problem.

Langsford, Harry Marble. An Experimental Study of the Effect of Practice upon Improvement in Melodic Dictation. Michigan State University, 1959.

Reviewed by James C. Carlsen

Abstract

At the beginning of the thesis, Dr. Langsford includes the following abstract.

Statement of the problem. The problem under examination in this experimental study is one of major importance to the teacher of melodic dictation. Simply stated, the problem was to determine whether or not any relationship exists between the amount of practice time spent in melodic dictation and the amount of improvement shown over a given period of time.

This experimental study was founded upon one basic premise, which is that the skills involved in taking melodic dictation as well as the other skills which are dealt with in aural harmony courses are improvable. This empirical knowledge, however, had not been validated by sufficient experimental studies. It was with this lack of statistical information in mind that the present study was undertaken.

Methods of procedure. The population of the study was comprised of students from the writer's second semester ear training classes at Wayne State University.

In order to gain the necessary knowledge of the relationship between practice and improvement, an experimental design was evolved whereby all participating students submitted to a controlled test-practice-retest situation.

The entire population at the beginning of the semester took a tape-recorded melodic dictation test devised by the writer, and individual scores were noted. In addition, a series of aptitude tests were given (Drake and Seashore), and three matched groups were formed on the basis of these test results. Each group was then assigned a different number of hours to practice melodic dictation during the semester, i.e., 10, 20, or 40 hours. At the end of the semester, after all practicing had been completed, the tape-recorded melodic dictation test was regiven. The scores from this testing were also noted, and the variances between the two testings were subjected to statistical analysis so that the relationship between practice time and improvement could be computed. The same procedure was replicated a second second semester to increase the size of the population and the validity of the results. The total population of the study was 48 students: 27 the first semester and 21 the second semester.

Statistical analysis. The data thus obtained were subjected to various statistical techniques. A "t" test was employed to test the significance of the gains within and between all groups each semester. By means of the simple analysis of variance technique, an F ratio was computed for the total population of each experiment, and for the two experiments combined, to statistically determine the relationship between practice time and improvement.

Results of the study

1. Although the mean gains within each group both semesters were found to be significant, no significant statistical relationship was found to exist in either experiment between the amount of time spent in practicing melodic dictation and improvement.

2. Practice is effective, but the amount of improvement is not necessarily the result of, nor proportionate to, one factor only, i.e., amount of practice time.

3. All students, with only one exception, made improvement.

4. The 20-hour groups, as a whole, seemed to show a somewhat higher mean gain than either the 10- or 40-hour groups.

5. Controlled experimentation in the area of melodic dictation is very difficult. In addition, the relatively small population of this study created limitations which must be recognized in the interpretation and application of the results. The uncontrolled variables such as the amount of practice time spent outside of class in sight singing, rhythmic dictation, etc., undoubtedly influenced the individuals' amount of improvement in melodic dictation.

6. Students with more than three years of piano study tended to make more than the average amount of improvement.

Comments

Dr. Langsford has undertaken an important topic for his doctoral thesis. This in itself is noteworthy when one considers the exercises performed by some to earn the degree. The search for more effective teaching or training techniques, particularly in the area of aural perception, is still in its infancy. That Langsford's study has made a contribution to this search is apparent.

His efforts for control (hours of practice) are reasonable within the framework of the experimental design which he adopted. It is at this point, however, that the study may be weak. While the problem was to determine the relation between the amount of practice time and the amount of improvement in melodic dictation skills, the experimental procedure may have provided a different kind of data. Because the students in each of the three groups also attended two ear-training classes weekly in which melodic dictation techniques (among other things) were studied, it is probable, as Langsford points out, that learning was a function of the class instruction as much as anything else. As a result, one should not conclude on the basis of this experiment that the amount of time spent in practice is not related to improvement simply because there was no significant difference between the three groups' test scores. On the contrary, little can be concluded about practice effect because the data were not a reflection of only practice.

In order to obtain these kinds of data it would be necessary to control the uncontrolled variables of outside practice on sight singing and rhythmic dictation which Langsford refers to in No. 5 above, and to the instruction obtained in class. Granted, these are difficult controls to implement, but valid data are not possible without them.

Langsford reported further investigation and testing with a second semester group in which students could practice any amount of time they chose. In general, the amount of time was lower than that used by the experimental groups, as were the test scores, suggesting that the practice in the earlier experiment did contribute to improvement. On the basis of this additional information and upon the fact that practice for all three experimental groups was spread evenly over a period of 12 weeks, it is the feeling of this writer that a replication of this experiment with appropriate modifications would show that improvement effects were a function of spaced practice rather than amount of practice.

In addition to considerations of variables needing control and the operation of spaced practice, the data obtained may have been a function of test reliability and objectivity. No tests for these two factors were reported in the thesis. The study does explore certain interrelationships between improvement and the standardized tests cited in the abstract. It would have been of interest to this writer to learn what interaction or correlation there might have been between student ability levels and treatments.

La Rosa, Joseph Domenic. A High School Curriculum for the Development of Musicianship in Individual Orchestral Players. Reviewed by Lewis B. Hilton. University of Arizona, 1965.

The aims and objectives of this dissertation were explained as follows by La Rosa: "In any established curriculum, the objectives must form, of necessity, the basis for planning educative experiences and must provide the criteria for evaluation of instruction...thus, the overall aim and objective of this dissertation is to suggest a plan which will motivate the orchestra director's ideas, planning and procedures. Such a process will add dimension to the rehearsal by presenting materials that are to be utilized during portions of the orchestra's allotted time....The process for the development of this plan, both for the group and individual participating members will evolve during the rehearsal by providing stimulating and creative experiences which will challenge the abilities and curiosities of all students in terms of music theory, technical skill, musicianly performance and aesthetic understanding....

La Rosa presents a threefold treatment for the development of this musical plan.

1. To create a plan of music growth which will be accumulative and sequential over a prescribed period of time and which will provide all students in the orchestra diversified experiences in the following areas: music theory, technical skill, musicianly performance and aesthetic understanding.

2. To present original material specially conceived to broaden the student's perception of music theory, technical skill, musicianly performance and aesthetic understanding.

3. To further the development of musical discrimination in the more talented orchestral students by means of especially selected projects, such as ensemble performance, guided listening to music literature conducting, composing and research.

The dissertation then is an attempt "...to present ideas and approaches for teaching musicianship during the regularly scheduled orchestral rehearsal."

La Rosa recommends that "...a school orchestra meeting five times per week during a ten month school year should devote at least one period per month to each of the following areas of study: music theory, listening, musicianly performance, and aesthetics."

The plan, consequently, will absorb one rehearsal period each week specifical organized to include activities aimed at developing these areas of musicianship.

Critique

La Rosa, like many other music educators, seems genuinely concerned with the problem of the extent to which the performance group makes a contribution to the total curriculum. In general La Rosa's approach is to separate the various aspect of general musicianship and develop a curriculum for each segment. For example Chapter Two is entitled "Four year developmental plan to provide knowledge and understanding of music theory through group experiences." The title of Chapter Three is "Development of playing technique in individual orchestral members through group procedures." "Listening as a means of developing aural perception through rehearsal procedures out-of-class activities" is the title of Chapter Four, and Chapter Five is entitled "Developing an aesthetic sensitivity for orchestral music by means of research, discussions, and related activities."

La Rosa could have saved himself a great deal of time and space had he made use of the available programed materials in the area of elementary music theory. For example the programed text by Clough[1] handles most of the rudimentary material covered by La Rosa in a considerably more succinct way. Then, of course, La Rosa could have applied the material to performance (certainly there were fewer programed texts available in music when La Rosa was writing his dissertation than there are now).

The most serious criticisms of the dissertation are (1) that there appears to be a great deal of padding and unnecessary, irrelevant material, (2) that the music selected to represent the twentieth century is by no means representative of the twentieth century (Gian Carlo Menotti is hardly a representative twentieth century composer), and (3) that the section on aesthetics would need a great deal of reworking before it would be of any value.

The padding referred to can be illustrated by two examples: A discussion of sonata allegro form which is almost childlike in its simplicity should not be necessary in a document prepared for a professional music teacher (or perhaps this reviewer is being childlike in his simplicity concerning the preparation of music teachers). The inclusion of the section on the selection of quality orchestral instruments is another example of material that could better have been omitted.

The lack of really representative twentieth century works can perhaps be explained partly by the expected performance level of students given the La Rosa treatment, but it seems unnecessarily unrepresentative of twentieth century idioms.

La Rosa is definitely at his best when being workaday and practical and at his worst when being philosophical or undertaking a discussion of aesthetics.

La Rosa's sections on evaluation need considerable rethinking before they would be effective tools. A small sampling of some of his completion-type questions will suffice to demonstrate this need:

1. The most flexible section of the orchestra with the widest range of emotional expression is (the strings).

2. The (violoncello) is a stringed instrument whose development was influenced by the ancient viol da gamba.

3. A musician playing a brass instrument can play a series of approximately (seven) notes without pressing any valves.

4. The sackbut is the German name for (trombone).

Somewhat naive, often cliche ridden, and with the faults discussed briefly above, nevertheless it should be said that whatever the weaknesses of La Rosa's proposed curriculum, the high school music student receiving the La Rosa treatment would be fortunate indeed in many respects.

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[1] John Clough, Scales Intervals Keys and Triads: A Programmed Book of Elementary Music Theory (New York: W. W. Norton and Company, Inc., 1964).

Latherow, Robert Lee. An Overview of the Teaching of Vocal Music in Secondary Schools. Columbia University, 1962

Reviewed by George Hansler

The term Overview in the title might suggest to some that this is a survey or status study designed to show existing practices in the teaching of vocal music in secondary schools, or perhaps to compare the effectiveness of such teaching in various sections of the country. This, however, is not the case. The primary purpose of the study is to present "procedures for organizing and techniques for developing singing activities in secondary schools" which will promote high quality vocal music instruction. This is a "how to" project, the term Overview referring to the wide range of vocal subtopics rather than to a resume of prevailing practices. The study is intended to serve primarily as a guide for the beginning vocal music teacher, but to be useful as well to the in-service teacher, the church choir director, and to those who prepare vocal music teachers in college departments of music education. There are also a number of secondary purposes for the study. These include the clarification of aims and objectives for each phase of secondary school vocal music instruction and the establishment of criteria for selecting high quality materials for various kinds of vocal groups.

The project is organized into two parts: the first deals with the secondary school student and singing activities appropriate for him, while the second is concerned with various aspects of voice production. Part One includes discussions of the adolescent singer, especially with respect to the boy's changing voice; the general music class (renamed "musical arts class" by the author); the organizing and rehearsing of choral ensembles; the voice class; and public performances. The subdivisions in Part Two are the usual ones found in books on singing, i.e., tone quality, resonance, breathing, and diction. The final chapter is an effort to suggest ways of implementing good tone, correct breathing, and clear diction in vocal performance. The scope of the project is thus seen to be very inclusive, nearly every aspect of secondary school vocal music being dealt with to some extent.

The author's organization of his material into topics and subtopics is, in the present writer's opinion, clear, logical, and orderly. (The fact that there is some duplication of material in various sections is justifiable in view of the stated objective of treating each singing activity comprehensively.) The author's procedures in arriving at the judgments he makes are, unfortunately, very much less clear and logical. In the section Method of Approach, he indicates three main sources of information: (1) literature in the fields of singing and music education, (2) observation in vocal music classes of secondary schools in the states of New York, New Jersey, Indiana, and Illinois, and (3) his own experience as a voice teacher, choral conductor, and supervisor.

Anyone familiar with the literature on the voice (particularly with V. A. Fields' Training the Singing Voice) is aware of the contradictory nature of the writing about singing. It seems possible to "prove" almost any theory about singing depending upon what "authority" is quoted. Hence, in a scientific work, the statements of others about the voice should be carefully examined and evaluated. The many quotations in this project, however, are usually accepted without question. For example, with Dykema and Gerkins as authorities, he states that in a cappella choir there should be a predominance of first sopranos and second basses, and that there should be approximately three-fifths female voices and two-fifths male voices. There is no consideration of the possibility that other authorities might not agree. In another instance he is apparently unaware of a contradiction between two statements he makes about the breathing process in singing. The first is his quotation of a statement adopted by the American Academy of Teachers of Singing, which he believes most present day vocal teachers endorse. This states in part, "in exhalation...the ribs contract." In the second (two pages later) Latherow writes, "The ribs must never fall from the first breath until the last note of the phrase is finished." Since one cannot sing a phrase without exhaling, the statements are obviously contradictory. (The underlining is the present writer's.)

The judgments for which no authority is given and which presumably are based on the author's observation and experience are far more numerous. Many, perhaps most, of these would be accepted as sound ideas by a majority of vocal music teachers. Some of the ideas, however, are certainly debatable. For example, regarding the singing of a scale, he writes,

> "As the notes ascend, the upper lip, which acting independently, is gradually drawn up more and more by means of the smiling muscles; each rising tone exposes more of the upper teeth. When the tone is soft, the effect, as regards the exposure of the upper teeth, should be as though a higher pitch were being sung."

In discussing the general music class he states, "Senior high school classes, like junior high school classes, should be heterogeneous groups; they should not be organized according to I.Q. ratings of ability." Still other of his judgments, in the present writer's view, are confusing if not downright erroneous, and surely should not be presented as fact in a project intended as a guide for the beginning teacher. For example, in discussing the function of the soft palate in singing, he writes,

> "A deterrent to good resonance is the fact that singers may shut off this upper (nasal) part of the resonating cavities by an excessive lowering (sic) of the soft palate. The result is that the tone seems flat in contour, dull, and lacking in vigor and carrying power; the quality often is said to be 'white'. Ironically, the result of closing off the nasal cavities may result in a tone quality which is labeled as 'nasal' or 'nosey'...Beautiful singing... develops also by retaining an open nasal port and thus allowing the tone vibrations to be transferred into the structures above the level of the roof of the mouth."
> (The underlining is the present writer's.)

His discussion of the registers of the voice is also not very clear. He describes three registers and gives ranges for each; judging from the ranges given, one gathers they are for the female voice only, though this is not specified. Although he mentions the existence of registers in the male voice, the reader is left to wonder about the extent of their ranges and their relationship to singing. The experienced vocal teacher can be expected to differentiate between what is fact and what is merely the author's theory, but the beginning teacher, to whom the project is primarily directed, lacks the required experience for making such decisions.

The orderly process of moving from demonstrable facts to judgments, which is characteristic of scholarly writing, is almost wholely absent from this study. The author seems oblivious of any obligation to document what he says or to test the statements of others. The only supporting data he gives for his own judgments is a statement near the beginning that he has done considerable observing and has had extensive experience as a teacher of vocal music. The reader is asked in effect to accept on faith that the author knows what he is writing about. If the project is research at all, it is certainly not scientific research. The author was perhaps trying to anticipate this criticism in the section Need for the Study by quoting Good, Barr, and Scates: "One has to choose between loyalty to formalism and the desire to do something of real practical worth, even though it attracts the criticism of the technical research worker." By the inclusion of this quotation, the author of the study would seem to be implying that it is not possible to be both scientific and practical in a project of this type.

Although he calls for an approach "based primarily upon the immediate likes and interests" of the students, the units for study which he suggests for "selling" a class on music are, in the main, the same ones that this reviewer has seen listed in music education publications over the past 20 years. (Most of these would get a cold reception indeed from students in the culturally deprived urban areas with which the present writer is acquainted.) The set of criteria given for selecting music for ensemble and classroom use includes a number of practical suggestions, but fails to mention what to this reviewer is the most important one, i.e., whether the music has artistic merit. (A typographical error, which does not affect the value of the project but is difficult to understand occurring in a carefully prepared final copy, is the appearance of the same paragraph at the top of both pages 123 and 124.)

The study contains little if anything that would not be known to the experienced vocal teacher, and it reports no new discoveries concerning the voice or vocal pedagogy. The chief value of the study is that it presents in one place many ideas about almost every facet of secondary school vocal music. As has already been indicated, some of the discussions are confusing, and involve undocumented judgments of questionable validity; on the credit side, however, should be mentioned others, such as the discussion on diction, which is clear and inclusive. The project could be useful to the in-training or beginning vocal music teacher provided that an experiences consultant is available to help differentiate between what is fact, what is widely held theory, and what is merely the author's opinion.

Lee, Robert Edward. An Investigation of the Use of the Musical Aptitude Profile with College and University Freshman Music Students. Reviewed by Olin G. Parker. The University of Iowa, 1966.

Ever since the beginning of music education, competent teachers have been making fairly accurate subjective judgments of musical talent in their students; however, all too often these judgments have been inadequate, as evidenced by the comparatively high drop-out rate of college/university students who enter as freshman music majors. An evaluative report[1] of research in the field of music education from 1930 until 1962 concludes that sophisticated research, including the development of standardized measuring instruments, was negligible in comparison to the other disciplines. Since 1962, though, there has been increased activity which portends improved objective prognostication of musical success, if music educators will avail themselves of these newer measures. Although the Seashore[2] tests served a very important pioneering function in the field of musical testing, their continued use by many music educators as well as college/university counselors must surely be due to ignorance of existing tests and measures more in keeping with our present psychological concepts.

Lee[3] has made a major effort to alleviate the dearth of objective tests and measures needed at the crucial time in a student's life--when a student has to decide for or against a career in music. In addition to the fine efforts of Aliferis[4] and Aliferis-Stecklein,[5] Lee's[6] establishment of norms for The Musical Aptitude Profile[7] for the college/university freshman music students will enable counselors and advisers to more competently counsel college/university freshman and provide for their individual needs and abilities.

The measuring instrument[8] used in this study is the result of eight years of research into the nature, description, and measurement of musical aptitude conducted at the University of Iowa. Tonal Imagery, Rhythm Imagery, and Musical Sensitivity are the three main divisions used to measure basic musical factors. Tonal Imagery and Rhythm Imagery are classified as the nonpreference tests, each having two subtests. These are Melody and Harmony for the former, and Tempo and Meter for the latter. Musical Sensitivity is classified as a preference test. It has three subtests, Phrasing, Balance, and Style. Original short selections composed by Gordon, are used as test items and are played on the violin and cello. Students are asked only to compare a selection with a musical answer and judge if the selection and musical answer are alike or different, or to judge which of two performances is more musical. Eleven test scores are derived from the test battery: one score for each of the seven

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1/USOE Project E-016, "Evaluation and Synthesis of Research Studies Relative to Music Education," (U.S. Office of Education, Washington, D.C., 1963).

2/C. E. Seashore, D. Lewis, and J. G. Saetveit, Seashore Measures of Musical Talents: Manual, revised ed. (New York: The Psychological Corporation, 1960).

3/Robert E. Lee, "An Investigation of the Use of the Musical Aptitude Profile with College and University Freshman Music Students," unpublished Ph.D. dissertation (University of Iowa, 1966).

4/James Aliferis, Music Achievement Test (Minneapolis: The University of Minnesota Press, 1965).

5/James Aliferis and John E. Stecklein, Music Achievement Test (Minneapolis: The University of Minnesota Press, 1962).

6/Lee, op. cit.

7/E. Gordon, Musical Aptitude Profile (Boston: Houghton Mifflin Company, 1965).

8/Ibid.

subtests, a total score for each of the three main divisions, and a composite score for the complete battery. Norms are provided for various categories of students, ranging from grade four through grade twelve.

Because the Musical Aptitude Profile was originally designed for and standardized with precollege students, the music educator might reasonably question its usage with college/university freshman. This reviewer is in complete agreement with Cady[9] when he states that it is regrettable that so many pieces of research have been allowed to sink into obscurity for lack of nurture and application. He is recommending that music educators take what is available and build on it, rather than each striving for his own "original" research. This latter is just what Lee[10] has done.

The main problem of the study[11] was to establish normative data for midwest college/university freshman music students on the Musical Aptitude Profile. Other purposes were to investigate the reliability of the test battery for college/university music students, to investigate the relationships between freshman music students' test scores and various course grades, and to investigate the relationships between college choir members' test scores and their musical aptitude as rated by their choir director. The 508 subjects were college/university students enrolled in five midwestern institutions of higher learning.

The importance of the study centers around the Musical Aptitude Profile score of 332 freshmen enrolled in music theory classes in the participating schools. Apparently, 176 subjects' scores were not involved in the computation of reliability coefficients. Also, the same 332 subjects' scores were used to determine the means, standard deviations, standard errors of measurement, and intercorrelations among the various tests of the battery. As pointed out by the author,[12] students in freshman music theory classes constitute a comparatively homogeneous sample population which would tend to cause lower reliability coefficients. Table I shows that this is consistently the case.

Table II reveals that, as expected, the mean standard scores for all of the tests in the battery were higher for freshman music students than for public school students; likewise, standard deviations for all of the tests in the battery are consistently smaller. The test battery proved to be less discriminating among students who score at the upper extremes than it was for students who scored in the average category or at the lower extremes. "Scores for the complete test, however, show sufficient variability for discriminating among students at all levels."[13] As a result of the intercorrelations among the tests, it was indicated that the various tests in the battery do measure quite different dimensions of musical aptitude.

Regarding the secondary purposes of the study, the data showed that coefficients of correlation between freshman music students' Musical Aptitude Profile scores and music theory grades are generally higher than coefficients of correlation between college choir members' Musical Aptitude Profile scores and performance ratings.

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[9] Henry L. Cady, "Tests and Measures in Higher Education: School Music Teachers," Journal of Research in Music Education, 15 (1967), 150.

[10] Lee, op. cit.

[11] Ibid.

[12] Ibid., p. 42.

[13] Ibid., p. 72.

Lee[14] concludes that the Musical Aptitude Profile can serve as an effective test for college/university music students qualifying his recommendation, as customary, with the admonition that the scores be used by teachers and administrators as one of many criteria in the evaluation processes.

Table I.--Comparison of Reliability Coefficients Based Upon Scores of Musically Select Senior High Students and College/University Freshman Music Theory Students

Test	Musically select senior high	Reliability coefficients college/university freshman*
T1: Melody	.83	.72
T2: Harmony	.84	.79
T: Tonal Imagery	.90	.85
R1: Tempo	.80	.73
R2: Meter	.80	.73
R: Rhythm Imagery	.83	.86
S1: Phrasing	.70	.66
S2: Balance	.60	.70
S3: Style	.73	.58
S: Musical Sensitivity	.87	.79
C: Composite	.95	.90

*Corrected for length through the use of the Spearman-Brown Prophecy Formula.

Critique

It is not likely that Lee[15] can be accused of building his investigation around a measuring instrument that has an unimportant connotation, as Cady[16] says is so often the case. On the contrary, music educators who are familiar with the Musical Aptitude Profile will probably agree with Lehman in noting the thoroughness and care that characterized its preparation and suggests that the Musical Aptitude Profile is definitely one of the most important contributions to the continuing study of musical aptitude.

The related studies and bibliography cited by the author as well as the analyses of normative data have provided him with a strong base of operation and certainly provides a summary of the musical aptitude testing movement that is invaluable for the reader.

Regarding the reliability coefficients (Table I) obtained in this study, it is obvious that the test battery as a complete unit must be administered if the score(s) are to be of value for individual measurement and diagnosis.[17] Any partial usage of the test battery could at best be highly satisfactory only for group measurement.

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[14] Ibid., pp. 73, 74.

[15] Ibid.

[16] Cady, op. cit.

[17] Charles Leonhard and Robert W. House, Foundations and Principles of Music Education (New York: McGraw-Hill Book Company, 1959, pp. 341-2).

Table II, comparing the means, standard deviation, and standard errors of measurement of the musically select senior high students and the college/university freshman music students confirms logical assumptions, viz., that college/university freshman would have higher means, small standard deviations, and smaller standard errors of measurement.

The author states clearly and definitively that the subjects in this study were students at colleges and universities in the midwest, and from these he has suggested certain normative data. Subsequently, Gordon[18] has stated that:

> It is not unreasonable to assume that midwestern freshman music students are quite similar in musical aptitude to other freshman music students throughout the country because test scores earned by midwestern public school students were not found to be appreciably different from the scores of other public school students in the United States who participated in the standardization program.

Although the author has made a large step in the direction of furnishing normative data for the college/university usage of the Musical Aptitude Profile much more randomization geographically will be necessary. This reviewer's empirical observations do not bear out Gordon's assumption as stated above. It is hoped that from this beginning with 332 subjects, the process of standardization of the Musical Aptitude Profile for use with college/university freshman will proceed rapidly.

In his bibliography, the author lists several books and articles which are authoritative in the area of statistics. However, throughout the text when the author refers to certain unique statistical terms or operations (e.g., Spearman-Brown Prophecy Formula, degrees of freedom, and significant at the one-percent level) the statistically unsophisticated reader most likely would appreciate having the complete documentation as a footnote.

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[18] Edwin Gordon, Implications for Use of the Musical Aptitude Profile with College and University Freshman Music Students (Lecture presented at the Music Educators' National Conference, Kansas City, Missouri, 1966).

Table II.--Comparison of Standard Score Means, Standard Deviations, and Standard Errors of Measurement Based upon Scores of Musically Select Senior High School Students* and College/University Freshman Music Theory Students in the Sample Population**

	Means		Standard deviations		Standard error of measurement	
Test	S.H.***	C.F.****	S.H.	C.F.	S.H.	C.F.
T1: Melody	56.3	63.7	9.56	6.60	3.9	3.5
T2: Harmony	47.4	66.0	9.53	6.98	3.8	3.2
Tonal Imagery	57.1	64.9	8.87	6.14	2.8	2.4
T: R1: Tempo	57.3	64.1	8.65	6.72	3.9	3.5
R2: Meter	58.1	66.6	8.77	6.59	3.9	3.4
Rhythm Imagery	57.9	65.4	7.99	6.03	3.0	2.5
S1: Phrasing	56.4	61.0	8.91	8.84	4.8	5.2
S2: Balance	56.6	66.8	8.75	7.79	4.7	4.9
S3: Style	57.0	62.6	9.02	7.79	4.7	5.1
S: Musical Sensitivity	56.7	66.8	7.09	6.23	2.5	2.9
C: Composite	57.2	64.0	6.91	4.91	1.5	1.6

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*E. Gordon, Manual: Musical Aptitude Profile (Boston: Houghton Mifflin Company, 1965), p. 55.

**Robert E. Lee, "An Investigation of the Use of the Musical Aptitude Profile with College and University Freshman Music Students." Unpublished doctoral dissertation, University of Iowa, 1966, p. 50.

***S.H. = Musically Select Senior High School Students.

****C.F. = College/University Freshman Music Theory Students in the Sample Population.

Lehman, Paul R. The Harmonic Structure of the Tone of the Bassoon* University of Michigan, 1962

Reviewed by George H. Wilson

The purpose of this research was "to examine quantitatively and in greater detail than has previously been possible the harmonic structure of the steady-state tone of the bassoon." (p. 7) It was also hoped that "the data gathered might provide a basis for possible improvements in the construction of the instrument bassoon." (p. 7)

The researcher attempted to determine the general characteristics of the tone with respect to the location of the formant (the area of resonance in which all partials are reinforced) and the extent to which the harmonic structure varied with intensity. In addition, the tones of a group of professional bassoonists were analyzed to determine the extent to which the harmonic structure of the tone varied from one player to another. Finally, an attempt was made to determine the extent to which the harmonic structure varied from one sampling to another in the playing of a single individual.

The results of the experimentation are reported in extensive tables in terms of intensity and mean strength of the partials of the tones of the bassoon. These tables compose the major bulk of the dissertation and are located in the appendix.

The results of this study help identify the physical phenomena taking place at various pitch and intensity levels of the bassoon. Several questions are raised, such as: Is it possible to evaluate the quality of an individual player's tone through electronic equipment or must this type of evaluation remain subjective?

The research report points the way to various possible research avenues. For example: (1) How does the reed affect the strength of the various partials? (2) How would the use of different make bassoons affect the response of the partials? Other factors which could be similarly tested include bocal, alternate fingerings, temperature, and humidity.

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*Order number 63-390, microfilm $2.75, xerox $9.50

The fact that all the players who participated in this project were highly skilled limited the comparisons which could be made. There was not a high degree of variation among the players.

The significance of the results of this study is difficult to evaluate. One feels, after studying this research report, that new information has been discovered, yet to ascertain the degree to which these data will affect bassoon performance and pedagogy is not a simple task. Factors such as tone quality, intensity, and resonance still must be considered subjectively during performance. Certain processes have been defined in this report which heretofore have been dealt with in purely aesthetic terms. The results of this research may be of most use to the manufacturers of bassoons and to other persons who are interested in the technical improvement of the instrument itself.

The researcher is to be commended for the thoroughness with which the project was carried out. The subject was well delineated and the variables well controlled. One possible further control of variables would have resulted if each player had used the same instrument.

I would agree with the researcher that "the research either raises or leaves unresolved more questions than it answers." (p. 48) This is often the case of such research and indeed is one of its objectives.

Lester, William, Jr.. A Comparison of Three Methods for Improving Intonation in the Performance of Instrumental Music. **University of Colorado, 1963**

Reviewed by Philip B. Corv

Dr. Graves has prepared a brief summary of this study which has been approved by his advisors, Dr. William N. Reeves, Professor Hubert H. Mills, and Dr. Homer Rainey.

The purpose of this investigation was to discover the relative effectiveness of aural, visual, and conventional methods for improving intonation in the performance of instrumental music. In approaching this study, answers were sought to the following questions:

1. What is an aural, a visual, and a conventional method which may be used to improve intonation in the performance of instrumental music?
2. To what extent is each of these methods effective?
3. To what extent are such factors as intelligence, pitch discrimination, pitch achievement, and the performance instrument related to the improvement of intonation?

To find answers to the problem, an experiment was conducted with selected members of the band at Bobo High School in Clarksdale, Mississippi. Three methods--an aural, a visual, and a conventional--for improving intonation were developed to conform to the existing program.

The aural method involved practicing musical material while using a framework of pitch reference provided by an electric chord organ, comparing played tones with reference tones, and developing an awareness of beats to detect the need for pitch correction and to decide whether or not correction had been achieved.

The visual method utilized visual reference patterns produced by the Stroboconn to detect faulty intonation and to indicate its correction.

The conventional method employed knowledge and understanding of theoretical concepts to bring about improvement in intonation. This method depended upon the listening sensitivity of the subject and instructor to identify pitch inadequacies and to evaluate correction.

An equivalent-groups technique was used to structure three groups of eighteen subjects each. Analysis of pre-experiment data revealed no significant difference among these groups when the variables of intelligence, pitch discrimination, and pitch achievement were considered. Each group was assigned by chance to a different instructional method.

An experiment was conducted employing the three methods. Designed to involve a span of one semester, the experiment was structured into three subperiods of six weeks each. During each subperiod, each subject was given a thirty-minute private lesson per week for the first five weeks. All subjects were given similar instruction except for a ten minute portion of each lesson during which time the three experimental instructional methods were used to focus special attention on the problem of intonation. Individual performance retests were made during the sixth week of each subperiod. Scores made on these retests, together with pre-experiment scores, provided the data which were analyzed statistically in seeking answers to the questions posed by the investigation. The findings indicated the following:

1. Each of the methods was significantly effective in improving intonation.
2. The three methods differed significantly in relative effectiveness on different testings, and when different areas of the musical material were involved.
3. As the time span increased, the degree of increase in effectiveness of the aural and conventional methods was reduced noticeably, while that of the visual method remained apparently constant.
4. None of the methods was consistently superior to the others; however, the conventional method appeared to be more effective generally than did the aural and visual methods.
5. No significant relationships were found between improvement and the variables of intelligence, pitch discrimination, and the performance instrument; however, a highly significant relationship was found to exist between improvement and pitch achievement.
6. No significant correlation was found among the variables of intelligence, pitch discrimination, and pitch achievement.

Significant contributions provided by the study were: (a) the development of three instructional methods for improving intonation in the performance of instrumental music, (b) an evaluation of the Stroboconn as a teaching device in the area of intonation improvement, and (c) an experimental design suitable for further research.

Reviewer's comments

Dr. Graves's study is solid research with sound statistical treatment. It has the usual faults of dissertations prepared upon a set form determined by a committee. The iteration and reiteration of the same statements in different chapters serve to fill out an impressive number of pages but do not increase the effectiveness of presentation. Until academic minds are freed from emphasis upon sterile form such repetitiveness will continue in research papers for advanced degrees.

The statistical significance of the results is beyond question. All three methods demonstrate progress. The greater effectiveness of the conventional method may be interpreted as occurring because the learner had to develop his own powers of discrimination. The fall-off in efficiency of the aural group (a) follows the pattern observed by researchers in other areas of learning that gimmicks produce results effectively for a short time only. More extensive time in the period of research might effect the results of the visual group (b) in a similar manner. Additional research is needed to test the long term results of the use of the stroboscope with that of the conventional method.

Lutz, Warren W. The Personality Characteristics and Experiential Backgrounds of Successful High School Instrumental Music Teachers. University of Illinois, 1963

Reviewed by Jackson Reynolds

Critique

The purpose of this study is to provide a reliable basis for the intelligent selection of potential music education students and to aid university faculties in the development of desirable characteristics for the preparation of music education students. The study is limited to teachers in instrumental music and is based on four major premises: (1) that personality is a direct correlate of teacher effectiveness, (2) that successful teachers "have a common identifiable pattern of personality characteristics and a common pattern of identifiable elements in their backgrounds and experience," (3) that the suitability of a student can be predicted through knowledge of such patterns, and (4) that universities, particularly the University of Kentucky, do not emphasize this aspect enough in the preparation of their music education students. Due to geographic and cultural limitations of the respondents studied and difficulties regarding the identification of successful and unsuccessful teachers, few contributions to the substantiation of the premises are to be found in the study. Perhaps more validity might have been possible if the study had been delimited adequately, at least regarding the present status of the group of respondents as a whole. As it stands, the reader is asked to accept too many unproved assumptions and generalizations for the study to be of great value in terms of the announced scope.

Dr. Lutz requested the cooperation of high school instrumental music teachers listed in "Music Teachers in Kentucky Elementary and Secondary Schools, 1960-61" and supplemented the test group with 33 additional teachers "who were graduates of the University of Kentucky Music Department and who were now employed outside the commonwealth (sic) of Kentucky." A total of 165 teachers were contacted, and 103 agreed to participate in the study. The subjects thus selected were asked to complete the "Instrumental Music Teacher Questionnaire," designed by Dr. Lutz, to investigate their backgrounds and experience and to complete the Group Form of the Minnesota Multiphasic Personality Inventory. Opinion rating forms were sent to an administrator, a fellow teacher, and a student--apparently selected by the subjects themselves--with the intention of determining which of the music teachers might be regarded as successful.

The Instrumental Music Teacher Questionnaire dealt with age, amount and type of teaching experience, extent and areas of concentration in academic preparation, degree of involvement in high school and college music activities, extent of participation in "out-of-school" music activities, number of different school systems employed in since graduation, nonmusical activities and hobbies, interest in advanced degrees, and satisfaction with teaching as a career. The form was designed as a completion questionnaire, with no provision for unsolicited information. Except for the MMPI, no

* Order number 64-2920, microfilm $2.75, xerox $8.60.

attempt was made to achieve any depth, either by interview or any other method, and no attention was given in the study to cultural or socio-economic derivation, ideological orientation, experience as a professional performer, motivation for teaching, or even marital status. Apparently, Dr. Lutz did not consider these areas relevant to the study.

The opinion rating form was sent to an administrator, who was "...in the position of being responsible for the employment, and ...therefore, must form a value judgment of the presence or absence of success in the instrumental music teacher," to a fellow-teacher "...in the position of working with some of the same students and ...well equipped to furnish peer judgments of the relative merits," and to a student, who "...comes into greater contact with the music teacher than either the administrator or the fellow teacher, and could evaluate the music teacher's contributions to his (the student's) musical growth more accurately than either of these persons." The form itself contained 31 items which were to be marked on a four-point continuum labeled "usually, sometimes, seldom, and very seldom" or "very good, average, poor, and very poor". Dr. Lutz assigned numerical values to the answers he received, so that "usually" was rated four, "sometimes" three, "seldom" two, and "very seldom" one. The initial criterion of success was:

> ...that the music teacher receive unanimous average scores of 3.0 or higher, and the second criterion was that the musical factor must have been graded 'very good'. Any teacher receiving a lower rating on this musical factor was considered unsuccessful for the purposes of the study. These two criteria are those utilized by the author to determine which of the responding high school instrumental music teachers are successful in the opinions of their administrators, fellow teachers and students.

Complete reliance was made upon the responses collected from processing the questionnaires. Even assuming that these subjects were free of bias (an unlikely circumstance), one is still obliged to question this process. Do administrators and fellow teachers actually possess the immediate, definitive knowledge required to provide meaningful answers? Is a four-point continuum adequate to express their opinions? Has any method been devised to determine whether any administrator has marked his evaluations "high" in order to defend his decision to retain the teacher? Assuming that the student knows the teacher well, does he understand the questions? Indeed, does anyone understand the questions in the same normative terms as all others, and if he does, do his answers indicate whether the teacher is successful?

Dr. Lutz describes the "successful" and "unsuccessful" teachers separately, providing as he does an exhausting presentation of analytical data. He also provides some composite findings, utilizing information from the MMPI, which may be of interest provided the reader is satisfied with the validity of Dr. Lutz's procedures. Some of these are:

1. Successful music teachers are interested in, and contented with, music education as a profession, while one-third of the unsuccessful teachers are discontented.

2. Both successful and unsuccessful teachers:
    a. Fell within the same general age bracket.
    b. Possessed the greatest amount of teaching experience at the high school level and the least amount of experience at the college level.
    c. Possessed undergraduate and graduate training in the areas of music and music education.
    d. Participated to a great extent in performing organizations both in high school and college.
    e. Studied their major musical instruments privately for about six years, although the successful teachers studied slightly longer.
    f. Were the recipients of prizes and awards through their musical activities.
    g. Participated in out-of-school musical activities at the time of the study.
    h. Studied the usual curricular offerings while undergraduate college students.
    i. Participated in out-of-school musical activities while in high school and college.
    j. Have nonmusical hobbies and interests.
    k. Are not, as a group, currently engaged in pursuing an advanced degree.
    l. Have been employed in a small number of school systems.

3. Both groups were unduly worried about their health, and both groups were outgoing and had wide interests. Neither group possessed overexpansion egos, and both groups worried and were self-critical. The hostilities of the successful group usually took the form of self-criticism, while those of the unsuccessful group took the form of sarcasm and cynicism. The successful group was not oversensitive or suspicious, but the unsuccessful group was, especially in social situations.

4. The personality differences between the successful grouping and the unsuccessful grouping were primarily a matter of degree and not direction, and the undesirable personality characteristics were found to a greater degree in the latter grouping.

5. As a group, the teachers:

    a. Are more sensitive and emotionally labile than the general population.

    b. Are extremely similar to the general population in terms of masculine interests and extroversion.

    c. Tend to experience physical sickness more frequently than the general population.

    d. Are less likely than the general population to be concerned with social mores.

    e. Are more likely than the general population to commit asocial acts such as lying, stealing, alcohol or drug addiction, and sexual immorality.

    f. Tend to be more moody and hostile than the general population.

Dr. Lutz recommends that universities employ more than high school grade averages and performing abilities in choosing their music education students, utilizing a detailed guidance program which should be continued throughout the college career with counseling and psychological testing by professional personnel. He candidly suggests that the conclusions of the study were "...necessarily tentative because of the smallness of the population," but he continues to assert that a "...comparison of the results of a similar study of choral music teachers with those of the present investigation might achieve a comprehensive picture of the high school music teacher in general." Finally, he concludes that "...another method of determining success might be employed with possible differing results," which ought to be reassuring to his reader, since the reader has been asked to assume that 103 Kentucky-orientated music teachers are representative of thousands of instrumental instructors and that administrators, fellow teachers, and students are able to determine whether music teachers are successful or unsuccessful. The problem studied is a very real one, and the use of the MMPI is interesting; however, the determination of success in teaching as well as application of the findings on a broad base are crucial points, and there remains a substantial question about the validity of his conclusions in terms of the announced aims of the study.

Marquis, James Henry. A Study of Interval Problems in Sightsinging Performance with Consideration of the Effect of Context. State University of Iowa, 1963

Reviewed by R. W. Froelich

Dr. Marquis is to be commended for the investigation of a problem which vitally concerns the teaching of sightsinging in the first year college music course. The study is concerned with the variation in performance of musical intervals in melodies sung at sight as compared with the performance of isolated intervals sung at sight. The purpose of the research is to study effects of contextual elements such as scale, harmony and tonality on interval problems in the sightsinging of melodies and to describe differences in performance on the basis of interval difficulty. The investigator assumes that more is involved in sightsinging than the ability to sing isolated intervals disassociated from melody.

McNaught, Elkus, Wedge, and Farnsworth are quoted in support of the contention that various factors of context are more important than basic interval quality perception in sightsinging.

The term context as used in this study is defined as "a general term which refers to the relationship of an interval item in its melodic environment, its rhythmic and its harmonic and tonal background." Not all contextual elements were involved in the study. Harmony was involved only as it was implied in the melodic line. Rhythm was not eliminated, but it was controlled. Marquis states the limitations of the study as follows:

> The study does not attempt to answer questions pertaining to changes in interval difficulty in sightsinging a melodic line within a total musical texture; it is limited to an investigation of the changes occurring in like interval items sung along an isolated or unaccompanied melodic line.
>
> The following hypotheses were formulated to define the problem:
>
> 1. The precentage of errors made in singing a musical interval will differ, depending on the context in which the interval appears.
>
> 2. Those who make errors in singing a given interval presented in melodic context will tend, also, to make errors in singing the same interval presented in isolation.
>
> 3. The percentage of errors made in singing an isolated interval at sight differs from that made in singing the same interval under different conditions of context.

It was pointed out that a number of investigators had suggested the idea of contextual effect upon interval difficulty while others had stressed the inherent quality of the interval. But no one had objectively investigated these ideas. Hillbrand's, Ottman's, Mosher's, and Ritchie's observations as well as the writer's observations are cited as a basis for need of the study.

Procedure

A valid and reliable Sightsinging Criterion was developed over a period of several years. Validity of the Sightsinging Criterion was determined by correlating scores with grade points in Sightsinging and Ear Training and scores in the final semester Aural Skills Dictation Test. The test in its final form consisted of the Sightsinging Criterion, eight melodies, some composed by the writer and others taken from the literature; and an Isolated Intervals Criterion, a random presentation of twelve intervals (m2, M2, m3, M3, P4, Tritone, P5, m6, M6, m7, M7, P8) in both ascending and descending order.

Both the Sightsinging Criterion and the Isolated Intervals Criterion were administered individually to fifty-two first-year college music students. The sightsinging performance of each student was recorded on magnetic tape to facilitate more accurate scoring.

The following analysis and evaluation of results was carried out:

Interval items* in the Sightsinging Criterion were classified into three categories according to the contextual setting in which each occurred. Categories were--Simple, Moderately Complex, and Complex.

Multiple sets of interval items were formed for item comparisons, each set consisting of a single item taken from each of the contextual settings. There were forty-five complete sets and fourteen partial sets, the latter containing a single interval item from only two or three categories. Some intervals could not be formed into sets because their items were all present under the same contextual conditions. These items which could not be compared for error differences in melodic setting were as follows: Tritone (descending), Minor Sixth (ascending), Major Sixth (ascending and descending), Major Seventh (descending). These intervals were compared, however, with intervals sung in isolation.

Statistical Techniques

A major portion of this study was devoted to statistical analysis of the response to each of the interval items. Detailed tables were presented in the analysis of errors on each interval. The statistical test for _interval error variation_ in contextual settings was the chi-square test for significance of the differences between correlated proportions. Errors between pairs of items in a given set were compared to determine whether an interval (in different contextual settings) varied significantly in percentage of error.

The statistical test for _error relationship_ between isolated intervals and intervals in contextual settings was the chi-square test of independence. This test may be stated as a null hypothesis as follows: people who make errors on isolated intervals are not the same people who make errors on intervals in melodic settings.

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* An interval item was defined as "a single instance of interval as it exists in music notation."

The statistical test for error differences between isolated and contextual settings of intervals was the chi-square test for significance of differences between correlated proportions. This test of paired items involved the comparison of errors on isolated and melodic intervals for changes between the two responses. The investigator stated that contextual interval error percentages were expected to vary above and below those of isolated intervals.

Findings

The following conclusions were reached regarding each of the hypotheses:

Hypothesis No. 1 was accepted. The percentage of errors made in singing a musical interval will differ depending on the context in which it appears. The writer reasoned that since differences in error were consistent with differences in contextual settings of intervals that differences in context influenced these differences in error. He also pointed out that elements of context influencing differences in performance can be identified.

Hypothesis No. 2 was rejected. Those who make errors in sightsinging a given interval presented in melodic context do not tend also to make errors in singing the same interval in isolation. The writer found little consistency between the ability to sing an interval in isolation and the ability to sing it in melodic context. He states further that, "this lack of consistency suggests that more is involved in melodic sightsinging than the ability to sing isolated intervals."

Hypothesis No. 3 was accepted. The percentage of errors made in sightsinging an isolated interval tends to differ from that made in singing it under various conditions of context. The writer also concludes that the differences in error between isolated and melodic intervals are not based on any direct influences between them.

Inferences

The following inferences are based on the above conclusions:

> Music students are significantly affected in sightsinging by differences in the contextual settings of intervals.
>
> Ability or the lack of it in the singing of an isolated interval does not directly affect the singing of that interval in melody.
>
> Ability to perceive the basic quality of intervals in melodic sightsinging is considerably less important than ability to perceive the scalar, harmonic, and tonal changes across or surrounding intervals.

Recommendations for Research

Suggestions for further research include (1) more extensive investigation of the relationship of isolated intervals sung at sight and intervals sung in a melody with particular attention to the specific conditions under which students will perform similarly on each; (2) a study of the influence of tonality on sightsinging; (3) a study of the effect of drill on scale elements, harmony, tonality and rhythm on the improvement of sightsinging; (4) a study to compare ability to sing unaccompanied melody with the ability to sing the melody with a harmonic accompaniment.

Comments

That this study is not the final word on the problem is set forth by the writer himself in his "Suggestions for Further Research." Further replication of this study with other populations of first year college music students would lend more authority to these findings. Adequate information is given concerning procedures so that the study could be repeated in similar situations. The guidance of a psychology or statistics department would be helpful in dealing with the complicated statistical procedures.

Not the least of the accomplishments of this study is the construction of a valid and reliable sightsinging test. Continued use and further refinement of the Sightsinging Criterion could be a major contribution to this area. Revision of the Sightsinging Criterion is needed to allow for more complete study of the Tritone, Minor Sixth, Major Sixth, and Major Seventh.

A weakness in the study is the necessary subjective judgment of the sightsinging responses by a single scorer. This will continue to be a problem in all investigations of this type until some method of machine scoring of recorded responses can be developed. A major improvement in the process of scoring was the recording of each individual's performance so that the responses could be more accurately checked. But unless these students were very unusual they did some "out-of-tune" singing. What degree of "out-of-tuneness" then constituted an error? Or what precisely were the limits within which one could get credit for singing an interval "in tune?" Should not the tapes of these performances have been checked by a panel of experts as was done in the preliminary testing in the development of the Sightsinging Criterion?

If the results of this study can be considered conclusive, then the implications for teaching the first year college class in sightsinging are obvious. Greater emphasis must be given to the development of an ability to recognize and use contextual elements of a melody (i.e., scalar, harmonic, tonal, rhythmic elements) as a basis for sightsinging.

Matthews, Glenn. An Analysis and Evaluation of Methods for Training Skills in School Music Conducting.* University of Oregon, 1963

Reviewed by Jack M. Pernecky

The author states the purpose of the study: "the need for the improvement of collegiate instruction in school music conducting initiated this study."

Examination of courses and teaching methods prompted the author to discover inherent weaknesses in this vital aspect of the school music curriculum. Evaluation of all areas of music at regular intervals should be the rule for all professional educators. With the increasing problem of devising a school music curriculum that considers all of the academic, professional education, music courses, and so forth, and satisfies all of the accrediting agencies, it is important that courses be closely scrutinized as to their significance.

Matthews includes a quote which typifies the thinking of leading music educators of the need for study of the college conducting course. Paul Van Bodegraven writes in the Music Education Source Book:

> "Another course which does not achieve its purpose is the course in conducting. Such a course would seem to be the proper place to consider those problems which the school music teacher will meet on the job. Possibly a course should be set up especially for those students majoring in music education. It has been traditional to develop a baton technique of sorts and then to concentrate on problems of interpretation as found in great orchestral masterpieces. Very little, if any, attention is paid to the problem of getting a choral group to sing in tune, a band to play with good tone quality, an orchestra to use proper bowing, and all of the other similar problems

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*Order number 64-1204, microfilm $2.75, xerox $8.00

> which make for success or failure when working with school groups.... It is what the conductor does when he puts down his baton that so largely determines his success or failure and these are just the problems which are neglected in the traditional course in conducting...."[1]

The Problem

The author of the study became interested in this topic because he felt a need to evaluate instruction and clarify the content of the conducting class.

There are many varying philosophies regarding conducting and how the course is to be taught. Content of the course and the type of presentation also varies. The type and amount of conducting experience consists of conducting from records to actual directing of laboratory groups as part of the course.

The problem is divided into subdivisions:

1. The establishment of those goals for the teaching of school music conducting which are in general agreed upon by the existing texts and other literature.
2. The determination of the goals for school music conducting as they appear to school music conductors themselves.
3. The determination of the above goals as they appear in the teaching of conducting in colleges and universities.
4. The determination of the above goals as they appear to a selected subgroup of school music conductors, herein to be known as the criterion group.
5. The evaluation of the teaching of conducting in colleges and universities by comparing goals with practices.
6. The formulation of an improved approach to the teaching of school music conducting on the basis of data obtained from the above.

Basic assumptions to the problems:

1. That among teachers and students of school music conducting there is general agreement that the training of school music conductors usually suffers from an overtheoretical and underpractical approach.

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[1] Hazel Nohavec Morgan (ed.), Music Education Source Book (Chicago: Music Educators National Conference, 1949), p. 41.

2. That information gathered from conductors of music in the public schools and from teachers of school music conducting, compared with goals for the teaching of school music conducting, will show the strengths or weaknesses of training in conducting as done at present.

3. That area of agreement among members of a selected criterion group have both reliability and validity sufficient to permit use of such data to establish goals for the teaching of school music conducting.

4. That enough similarities exist between choral and instrumental conducting that they may be considered as one, for the purposes of this study.

5. That enough similarities exist between conducting of large groups and small, and of beginning groups and advanced, that they may be considered as one, for the purposes of this study.

6. That the transition from student to conductor of school music can be made more easily and effectively by application of the findings of the present study.

Method

The study was implemented by way of a questionnaire which was directed to three groups:

1. Group I: selected school music teachers from the State of Oregon.

2. Group II: professors of conducting in colleges and universities of the United States.

3. Group III: ten conductors selected by five professors of conducting.

Since the validity of questionnaire-obtained data could be low due to the lack of interpretation of the meaning of the questions, the author constructed the questionnaire cautiously. Clarity of meaning and nonambiguity of the questions were ascertained. Questions in the form of short-answer responses and multiple-choice were used. Personal comments were encouraged. Also included were questions of whether separate conducting courses for choral and instrumental majors should be scheduled; the number of required conducting courses in the undergraduate and graduate degree; the number of credit hours; the number of meetings per week; and required prerequisites.

Ratings of Topics in General Conducting Course for Music Majors

	Group I							Group II							Group III						
	f	"I"	%	"II"	%	"III"	%	f	"I"	%	"II"	%	"III"	%	f	"I"	%	"II"	%	"III"	%
1. Drill on beat patterns	121	108	89.3	12	9.9	1	.8	64	59	92.2	4	6.3	1	1.6	10	9	90	1	10	0	0
2. Subdivided beats, compound beats	122	91	74.6	27	22.1	4	3.3	64	56	87.5	7	10.9	1	1.6	10	9	90	1	10	0	0
3. Preparatory (preliminary) beat, starting	122	117	95.9	4	3.3	1	.8	64	62	96.9	2	3.1	0	0.0	10	10	100	0	0	0	0
4. Cut-offs and releases	120	110	91.7	10	8.3	0	0	64	60	93.8	4	6.3	0	0.0	10	10	100	0	0	0	0
5. Cueing	122	94	77.0	26	21.3	2	1.7	63	54	85.7	8	12.7	1	1.6	10	7	70	3	30	0	0
6. Styles of beats (legato, staccato, etc.)	122	88	72.1	33	27.1	1	.8	64	57	89.1	5	7.8	2	3.1	10	9	90	1	10	0	0
7. Conducting with baton	122	46	37.7	46	37.7	30	24.6	63	37	58.7	19	30.2	7	11.1	10	5	50	2	20	3	30
8. Conducting without baton	118	44	37.3	40	33.9	34	28.8	57	15	26.3	24	42.1	18	31.6	10	4	40	3	30	3	30
9. Facial expression, use of eyes	120	34	28.3	54	45.0	32	26.7	61	37	60.7	21	34.4	3	4.9	10	1	10	5	50	4	40
10. Duties of right hand, duties of left hand	122	83	68.0	33	27.1	6	4.9	64	55	85.9	6	9.4	3	4.7	9	8	89	0	0	1	11
11. Physical drill, flexibility exercises	118	44	37.3	55	46.6	19	16.1	64	28	43.7	25	39.1	11	17.2	10	5	50	5	50	0	0
12. Dynamics, changes in volume, accents	122	105	86.1	17	13.9	0	0	64	57	89.0	6	9.4	1	1.6	10	10	100	0	0	0	0
13. Individuality in conducting	118	36	30.5	43	36.4	39	33.1	60	18	30.0	25	41.7	17	28.3	9	3	33	3	33	3	33
14. Free rhythm and irregular patterns	120	63	52.5	45	37.5	12	10.0	62	32	51.6	21	33.9	9	14.5	9	4	44	4	44	1	11
15. Changes in tempo; fermati and interrupt.	122	99	81.2	22	18.0	1	.8	64	61	95.3	3	4.7	0	0.0	10	9	90	1	10	0	0
16. Actual group conducting	122	112	91.8	9	7.4	1	.8	64	55	85.9	9	14.1	0	0.0	10	10	100	0	0	0	0
17. Conducting to records	122	28	23.0	68	55.7	26	21.3	62	7	11.3	28	45.2	27	43.5	10	5	50	3	30	2	20
18. Score analysis	122	94	77.0	26	21.3	2	1.7	62	46	74.2	12	19.4	4	6.4	10	9	90	1	10	0	0
19. Transposition	119	63	52.9	48	40.3	8	6.8	62	39	62.9	16	25.8	7	11.3	10	6	60	3	30	1	10
20. Knowledge of expression terms (esp. Italian)	118	102	86.4	15	12.7	1	.9	64	56	87.5	7	10.9	1	1.6	9	7	78	2	22	0	0

"I" = essential "II" = valuable "III" = relatively unessential

Recommendations

Matthews lists the following recommendations for the conducting course as derived from his study:

1. More experience in conducting of groups should be included in the conducting class.
2. Requirement of at least one formal college course for all prospective school music conductors. Considerations for the course would be:
    a. A minimum of two credit hours per term.
    b. A minimum of three meetings per week.
    c. Prerequisites of: theoretical training, vocal or instrumental proficiency, and junior standing.
    d. A year sequence.
3. A general course for beginners at advanced levels; separation into choral and instrumental courses. A graduate course desirable.
4. Adequate laboratory facilities should be provided, including groups to conduct.
5. A balance of emphasis between choral and instrumental practical experience should be maintained in the general course.
6. Only moderate use of reference assignments other than the textbook should be made.
7. Instructional aids should be used but in moderation.
    a. Conducting of both choral and instrumental groups.
    b. Conducting of small-, medium-, and large-sized groups.
    c. Conducting of beginners as well as more advanced performers, and young as well as older musicians.
8. Proficiency with a baton should be a basic requirement. Use or nonuse of a baton should then be a matter of individual choice for the specific group (as to age, size, and kind).
9. As a minimum, the 20 topics listed in the findings of this study should be included in a general course, with emphases as indicated.

10. Conducting experiences outside of class should be provided and assigned.

11. Individual differences among students should be noted and accommodated.

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The author should be commended on the excellent study and the attempt to solidify this important phase of the training of a teacher-conductor. The move is to correct the overtheoretical and underpractical approach to significant undergraduate and graduate courses and experiences. As stated in the introduction, evaluation of all aspects of the curriculum should be processed periodically. With a constant analysis and evaluation of methods for training skills in all school music courses, the music education curriculum will always be kept vital and meaningful.

McAnich, Daniel A. Technical Problems of the Oboe in the Woodwind Quintet. University of Rochester, 1956.

Reviewed by Lewis Hilton

We all sympathize with the doctoral candidate who must find a thesis topic and then write on it, since we have all found ourselves in the same predicament. It seems particularly difficult for the DMA candidate who, being primarily a performer, must try to find a topic to which he is sympathetic and on which he is knowledgeable, and yet one which will meet the requirements for the more academic minded of the music school faculty. As often as not, the kind of topic which a performing doctoral student chooses does not really lend itself particularly well to a dissertation treatment. I suspect that Mr. McAnich found himself in such a predicament several years ago at Eastman. His solution to the problem is not without considerable merit; it was probably of some value to Mr. McAnich to work out fingering, breathing, and fingering solutions to problems found in the oboe parts of standard woodwind quintet music. There is perhaps some value to be found here as well for the aspiring oboe player and perhaps somewhat more for the woodwind quintet coach in college or university who himself may not be an oboe specialist. Yet this reader's overall impression is that the kind of instruction undertaken in this thesis would be much better done in the private oboe lesson. The accomplished oboist will probably not need the suggestions given by Mr. McAnich, and the less accomplished, less experienced oboist will need, in addition to the suggestions given in the thesis, help from his oboe teacher in carrying them out.

Mr. McAnich's procedure was to select a fairly varied repetoire of woodwind quintet literature ranging from variations on "Pop Goes the Weasel" to Schönberg's, "Woodwind Quintet." He then selected oboe passages which offered problems of range, large and awkward melodic leaps, trills, tremolos, and other difficult fingering problems, problems of the oboe in the ensemble as they relate to balance and blend, intonation and general ensemble problems as well as specific problems of playing in unison or octaves with other instruments of the quintet. The author completes his study with a rather brief bibliography of books and articles pertinent to performance on the oboe.

Perhaps the most useful sections of the thesis deal with specialized fingerings for trills and for difficult passages, which the author has actually worked out for himself. Sections dealing with reed problems seem somewhat too general to be of any particular use to the immature oboist and most of the suggestions may be found in a somewhat more complete form in other literature.

The section dealing with tonguing of staccato passages mentions in passing a need for double tonguing, but there are no instructions for developing this skill on the oboe. There is certainly some value in his discussion of different kinds of releases in staccato tonguing in that he mentions the two standard techniques of returning the tongue to the same spot on the reed to stop the sound or, on the other hand, returning the tongue to the corner of the reed and then letting it spread out somewhat to make a less abrupt stopping of the tone. Incidently, this latter skill is one which can be developed successfully only with the help of a highly skilled oboe teacher. He does not mention, however, perhaps the most common technique of all of starting the tone with the tongue and releasing it with the breath and supporting each staccato tone with a "puff" of breath.

Later on, he mentions in the section on legato tonguing that some players use a cessation of breath support for this style of tonguing. "Cessation of breath support" seems somewhat misleading and, in any event, the stopping of the tone by air is not used just for legato tonguing, at least not by most oboists. "A slower release of the tongue is good" for legato tonguing. This also seems somewhat dangerous and misleading to the neophyte oboist, but again this is Mr. McAnich's dilemma. To whom is he addressing himself? To the advanced oboist, who probably does not need this instruction, or to the younger oboist who needs his instruction but also needs the help of the private teacher.

McQuerrey, Lawrence Howard. *The Improvement of Sensitivity to Interval Intonation Through Training With a Mechanical Apparatus, an Exploratory Study*.*

Reviewed by Maurice Gerow

Lawrence McQuerrey's dissertation is a narration of the events leading to and including an ear training experiment he conducted at the University of Indiana, followed by a statistical analysis of the data he gathered. However, little significance can be attached to his findings because his experimental population numbered only fifteen persons, and the experiment's duration was only eight consecutive 1/2 hour training sessions. McQuerrey himself realized this, as he subtitled his paper *An Exploratory Study*. Additionally two variables were uncontrolled, that of subject readiness for the experiment, and that of personal life emotions impinging upon the subject's performance during tests and experimental sessions. Nevertheless, some valuable spade work has been performed here, and McQuerrey did come across some interesting findings.

McQuerrey's basic premise was that intonation sensitivity to intervals could be improved by instruction using a mechanical teaching device, but not one of the programmed teaching machine type. Certainly this area is a gap in the normal education of even professional musicians. Typical music education includes melodic and harmonic interval recognition (ear training at the piano) matching pitches (tuning to "A" 440, or blending within a section), and with carefully trained musicians, melodic interval intonation (sight singing, or performing a scale or melody). One need only to attend many secondary school concerts to be aware of the basic lack which concerned McQuerrey. The ensemble tunes to "A" beautifully. But the music is in concert F, or G, or B flat. What happens next is often painful. The teacher must take the blame for the out-of-tune chords that issue forth, but, was he trained to tune them, or even notice them?

The first chapter of the dissertation is a detailed account of McQuerrey's research into the differences of the historical tuning systems. Here we see a clue to this gap in music education because there are large variances among the "same" intervals in the different systems. In tuning terminology a "cent" is 1/100 of a semitone, each 1/2 step having 100 cents, and an octave having 1200. The Pythagorean major third has 408 cents, the Just third has 386 cents, and the Well-tempered third 400 cents. McQuerrey, for completeness, also goes into some unimportant scale intonation experiments during the first half of the twentieth century.

Chapters II and III tell the story of the building of the Intonation Training Device, called by McQuerrey the ITD, and the development of a teaching technique, largely by trial and error, that would employ the special characteristics of the instrument. The actual construction of the ITD was done by Dr. Earle L. Kent, Director of Research for C. G. Conn, Ltd., of Elkhart, Indiana. The ITD is based on instruments used in the Conn electric organ and the Stroboconn. It features an octave keyboard from middle C to c the octave above. On an instrument panel above the keyboard

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***Ann Arbor, Michigan: University microfilms, 1957. 256 pp. Series No. 24, 559**

there is a nob for each chromatic note which will adjust that note's pitch a full 100 cents up or down. The instrument uses flute, reed, or string stops, plus a tremolo. Throughout the experiment only flute with tremolo off was employed.

Chapter IV is the best work McQuerrey did in the study. He discovered that there is no existing standard as to how many cents an "in tune" interval contains. It seems the well-tempered piano scale is not the authority we might think. Therefore he embarked upon a criteria study with the assistance of 27 members of the faculty of the School of Music at Indiana University. Included in the faculty group were ten string players, nine pianists, six vocalists, and five wind instrumentalists. He had each individual tune twice the intervals of his study, the perfect fifth, perfect fourth, major third and minor third. One tuning was at the keyboard and nob controls, and the other was done by instructing McQuerrey which note to change to bring the interval into tune. This was the identical procedure McQuerrey later employed during the experiment and its tests. He found the faculty, men who lived by the ear, to be very reluctant to submit themselves to a revealing of their pitch discrimination abilities. At the conclusion of these tunings the means of the faculty interval preferences were as follows: perfect fifth. 703 cents, standard deviation 7 cents; perfect fourth, 498 cents, standard deviation 11 cents; major third, 400 cents, standard deviation 13 cents; and the minor third 297 cents, standard deviation 14 cents. Substantial agreement was reached only on the size of the perfect fifth. Below is McQuerrey's chart comparing the faculty means with the various tuning systems:

	P. 5th	P. 4th	M. 3rd	m.3rd
Faculty	703 cts.	498 cts.	400 cts.	297 cts.
Well-Tempered	700	500	400	300
Just	702	498	386	316
Pythagorean	702	498	408	294

For the experiment McQuerrey used the faculty averages as his guide and picked as his criterion an interval size from one of the historic tuning systems that was closest to the faculty mean. These were his criteria: perfect fifth, 702 cents, Just or Pythagorean; perfect fourth, 498 cents, Just or Pythagorean; major third, 400 cents, Well-tempered; minor third, 300 cents, Well-tempered. He was not bothered by the fact that he was not using an integrated tuning system.

Here are the events of the experiment as related in Chapter V. A homogeneous population of 30 second semester music theory students at Indiana University volunteered to be subjects. The experimental group and the control group each had 15 students, 8 males, and 7 females. All took a pretest immediately before the experimental sessions, and a post-test immediately after. All tests were as described in the criteria investigation, and all were identical in content. This gave McQuerrey a pool of data totaling 120 tunings, 60 by the control group, 60 by the experimental group, 60 as a pretest, and 60 as a post-test. Additionally, he added a post-test II, a judgment test, described below.

The eight experiment training sessions were individual, and 1/2 hour each on a daily basis. The procedure was standardized and as many variables controlled as possible. The weakness here was that with 8 of the 15 experimental subjects the presentation could not be geared for improvement of intonation sensitivity, but had to be remedial work on interval recognition. In my opinion this almost negates the entire statistical findings. McQuerrey himself states in his summary that any further experiments should use graduates with a common interval recognition ability. A diary was kept on each subject and it showed that interval intonation sensitivity was greatly affected by how the subject "felt" that day, another uncontrolled, possibly uncontrollable, variable.

The final chapters deal with some extreme statistical analyses, the sort of procedures one would normally reserve for 1200 tunings over a period of 80 days rather than what was available in this study. At any rate, here are the results which McQuerrey produced: The experimental group performed better on the post-test I than did the control group, with a significance of a 1% level of confidence. The females in the experimental group achieved a level of performance that was significant at the 1% level of confidence in all phases of the experiment. But, the male performance was not significant on parts of the experiment and was only significant at a doubtful 10% level of confidence on the experiment as a whole. McQuerrey is at a loss to explain this apparent sex difference.

The seven experimental subjects who did not need remedial aid with intervals began to lose interest by the fourth training session. So, McQuerrey added an interval judgment phase to the training. He pre-set intervals out of tune by three different distances, first 50 cents too large or too small, then 30 cents, and then 20 cents. The subject received training in perceiving the direction of the error and in correcting the interval. One can see that were a subject wrong at the 50 cents setting, his directions at tuning the interval would result in creating a new interval. Post-test II measured this judgment ability in all 15 subjects. Results were not decisive, although more than not could perceive and correct the direction of the 50 cent error, but not the 30 or 20 cent error. In actuality, 30 or 20 cents deviation from the criterion was still "in tune" in the ears of a majority of faculty as evidenced by the information gathered in the criteria study.

In evaluation of the work done by McQuerrey, we can agree that he was instrumental in developing an excellent interval training and acoustical demonstration machine. In addition he has pointed out an area where improved educational methods are badly needed. Unfortunately he has been unable to show us that his machine or his methods will serve as an improvement in the training of interval intonation sensitivity.

Merriman, Lyle Clinton. Solos for Unaccompanied Woodwind Instruments: A Checklist of Published Works and Study of Representative Examples. State University of Iowa, 1963.

Reviewed by Lawrence Intravaia

Purpose, scope, and limitations. The purpose of the study was to list all published unaccompanied solos written for one of the modern standard woodwind instruments between circa 1700 and the present day. From this list, compositions which appeared to be of special significance to the author, either on historical and/or compositional merits, were selected for detailed discussion in the text.

The survey has three objectives: "(1) to compile a list of all published solos in this medium; (2) to investigate the musical value of these solos and bring to the woodwind player's attention the compositions that deserve special recognition; (3) to attempt to ascertain any noteworthy compositional techniques and devices that have been utilized in these works." The author points to the second objective as the most important of the survey because, the majority of the listed works being of meaningless value, "a substantial segment of the remaining works...could be worthy of serious consideration for performance."

With regard to the survey's limitations, Merriman excludes caprices, divertissement, themes and variations, etc., however, when they possess special interest, either historical or musical, he devotes some discussion to them. Also omitted are etudes and other pedagogical works. Further personal limitations required Merriman to establish "musical standards as an aid to deciding those compositions" which he would examine.

He does not include full theoretical analyzations, but devotes space to the harmonic and contrapuntal aspects of various works; formal organization is mentioned only when it has special interest or relevance.

Merriman felt his survey obstructed somewhat "by the lack of any standard designation for the specific medium." He refers to such items as "the exact performing medium, lack of uniformity in titles of works," and that "'unaccompanied' is not the same as 'without accompaniment' in the publisher's catalogue."

Outline of the survey. Chapter I is devoted to unaccompanied flute solos of the Eighteenth Century. Merriman presents an historical overview of the unaccompanied medium up to circa 1720, and limits himself to works which may be legitimately classified as solo material. The remainder of the chapter is a description of composers and an analysis of selected works for the unaccompanied medium.

Chapter II covers works for unaccompanied flute and clarinet during the Nineteenth Century. The author refers to this period as "the golden age of wind playing." His descriptive and analytical procedures are similar to those of Chapter I.

In Chapter III, the list of media is expanded to include oboe, bassoon, and saxophone in addition to flute and clarinet. Merriman follows the approach in writing of the Twentieth Century as in the previous two chapters. He presents thematic examples of selected works in all three chapters.

Appendix "A" contains a listing of published unaccompanied woodwind solos; Appendix "B" is composed of biographical sketches of composers discussed in the text; and Appendix "C" contains programs of recitals performed by Merriman in connection with his doctoral studies.

General overview. It appears that the flute was the first woodwind instrument for which composers wrote unaccompanied music. The first known examples of flute music published specifically for the transverse flute were composed in 1708 by Jacques Hotterre. Of the compositions written during the Eighteenth Century, Merriman feels the unaccompanied flute sonatas by J. S. Bach to be the most notable.

The early Nineteenth Century was dominated by the *air varie*, the caprice, divertissement, and other works of this nature. This was the era of the virtuoso performer/teacher of wind instruments among whom flautists were singularly significant. These performer/teachers, who also "fancied themselves as composers," with but an elementary understanding of composition, flooded the music market with a variety of tutors, and sets of solos, duets, and trios. These were calculated merely to serve as a vehicle for the exhibition of a performer's dexterity. "Musical considerations were usually incidental or accidental."

The Twentieth Century discussion opens with an analytical description of Debussy's "Syrinx." However, it is Wallingford Riegger's "Suite for Flute Alone," op. 6, 1929, that inaugurates a new era and a new type of solo virtuosity. Three musical elements responsible for this change were: range, chromaticism, and wide interval skips. Other musical devices and techniques noted in Twentieth Century compositions are: nondiatonic tones, elimination of repetitive, predictable melodic patterns, and an abundance of melodic angularity. The survey is brought up to contemporary times with a discussion of compositions by such *avante garde* composers as Roman Haubenstock-Ramati and George Perle.

Evaluation and conclusion. When compared to the technical and musical resources of the stringed instrument available to the composer, the unaccompanied wind solo is by far more challenging to the composer's creative and inventive ingenuity. This is especially true when the composer wishes to write a work that will have both audience appeal and musical integrity. Composers, therefore, have employed a wide variety of devices, techniques, and procedures in their works for single unaccompanied woodwind instruments. This diversity is reflected in the results noted by the author.

Merriman found that a "few works were capable of sustaining the interest of the listener. The others were competently constructed but obviously contrived." He also concludes that one of the most important factors which plays a role in determining the eventual success or failure of unaccompanied woodwind solos is "the use of an instrument's inherent characteristics and possibilities."

Concerning the quality and quantity of the repertoire examined, Merriman feels that it needs improvement in both aspects. For example, the quantity of clarinet repertoire is sufficient, but its quality is only fair, while the oboe repertoire is comparatively small but musically more satisfying. Regarding these two aspects, the leader is the flute with its repertoire of unaccompanied solos.

The author feels that the bulk of unaccompanied wind literature is unknown to the average player and/or listener and hopes that the survey will correct this situation and be of some assistance to the woodwind player who is looking for material to augment his repertoire.

Critique. Merriman's writing style is terse, concise, and to the point which makes for intelligible, informative, and pleasant reading. He accomplishes this by eliminating not only all trivial compositions, but also stripping away all nonessential details in his analyzations. Although the reviewer's background and experience afford him with a mild acquaintance with unaccompanied woodwind literature in all areas, he found much in this survey to be stimulating, interesting, and valuable. Those who are involved in applied woodwind instruction at the collegiate level, especially whose specialization limits their knowledge of woodwind repertoire outside their major field, should find this survey of much significance and assistance.

If there is any one particular point of the study with which Merriman may find opposition, it is with regard to his value judgments as to the musical merits of certain compositions discussed. Here the author delves into the highly nebulous and subjective realm of musical taste and aesthetics. This does not, however, deter the importance and quality of the study.

Moore, Paul B. Instrumental Music Teaching Techniques for College Methods Classes. University of Oregon, 1963.

Reviewed by Lewis Hilton

There exists a plethora of published material dealing with techniques for teaching and/or playing the various instruments of the band and orchestra. Recently, at least two series have appeared on the market which purport to be complete instrumental music methods texts for teaching the instrumental classes in the secondary music education curriculum at the college level. These methods texts are very brief in the important areas of embouchure formation, fingering techniques and so forth, but contain considerable music to be played by the students in the classes. There is no text available which contains both music and a complete compendium of information about playing and teaching the instruments of the band and orchestra. One is still forced to glean what he can from various texts to make up a complete course in orchestral and band instruments.

Mr. Moore's thesis, if published, would in some respects alleviate this problem. Although he deals only with wind and percussion instruments which makes his title somewhat misleading, and there is no music included for the classes, nevertheless, there is much valuable material about teaching and playing techniques which, although available here and there in other sources, is not to my knowledge compiled with any degree of thoroughness in any one published book. The thesis contains 14 chapters plus a bibliography and a brief appendix which relates to what appears to be a somewhat futile attempt to have "experts" evaluate the thesis. A chapter is devoted to each of the principal instruments of the concert band together with an introductory chapter and one which is devoted to problems common to all wind instruments, i.e., breathing, tonguing, vibrato, etc.

Since Mr. Moore's dissertation is meant to be immediately practical and of use to the young instrumental teacher in the instrumental music status quo, I suppose one should not complain about the lack of any kind of philosophical orientation; nevertheless, this reviewer finds mildly annoying such a statement as is found in the introductory section reading:

> It is not important that the motivating factors for the band program are not defensible by the highest educational standards because it is now so firmly established.

particularly when one comes upon the statement on page 9 in the same section stating that:

> Many textbooks and articles dealing with music education in general were reviewed in recognition of the fact that any teaching must be based on the educationally defensible standards.

The most serious technical weakness of the dissertation seems to lie in the author's disregard for the importance of an acoustical understanding of the functioning of musical instruments on the part of the instrumental music major. For example, in a rather rare reference to acoustics, he cites a book written in 1929. Many woodwind and brass fingerings which must appear highly obscure to the instrumental novice could be clarified quite easily by acoustical explanations. After all, this thesis is designed as a college-level textbook.

The chapters on brass instruments appear to be more complete and based on a better understanding of the instruments than those chapters dealing with the woodwinds or percussion instruments. One can certainly disagree with the author's point of view concerning such controversial subjects as the preference for the single B flat horn for beginners and the right-hand position in the bell of the French horn, but the author offers alternative points of view along with his own and its defense. Of particular value are the sections dealing with the G attachment to the tenor trombone, the teaching and playing techniques for the baritone and euphonium and all of the sections dealing with brass embouchures.

On the other hand, almost all trombonists would disagree with the author when he states that the F attachment to the bass trombone extends the range down to a low B since it is virtually impossible to use all seven positions with the F extension. In fact, it would have been very beneficial had the author chosen to explain why slide positions must become increasingly far apart as one increases the length of the trombone, thus obviating, on the F attachment, the possibility of reaching a seventh position which will be reasonably in tune.

A very useful reference is made to the "false" fundamental on the tuba. But unfortunately again no acoustical explanation is offered, a serious deficiency for a college textbook.

The sections on woodwinds are generally adequate but perhaps less well informed than the chapters on the brass instruments. There is practically nothing, for example, about reed problems, matching reeds to mouthpieces, types of mouthpieces, and so forth, certainly problems which are of central concern to the young instrumentalists.

One hopes that after some revision a publisher would see fit to make available Mr. Moore's useful collection of teaching and playing techniques to the school music public.

Neely, James Kilford. An Evaluation of Tests Given to Interrelate Intelligence, Aural Acuity and Musical Achievement for Purposes of Prognosis in Ear-Training. Northwestern University, 1959.

Reviewed by Paul R. Lehman

In an effort to establish a basis for predicting success in ear-training, Neely has administered a series of three tests to a group of 45 entering college freshmen. The first test was a "standard audiometric air-conduction threshold test to determine individual hearing acuity." The second was the Clark Analogies Test, Form C, a test of verbal reasoning in which the subject must choose a pair of words having the same relationship as another given pair. The Clark test is intended to measure intelligence. The third test was a musical achievement test designed by the author; it included subtests in interval, melodic, rhythmic, chordal, and harmonic dictation, and sight-reading of melodies and rhythms.

On the basis of the results of these tests, the author has sought to determine the nature and the extent of any interrelationships that may exist between physical hearing ability, intelligence, and musical achievement. The achievement test was given at the beginning of the experiment and again at the end in order to measure the improvement of the subjects. Unfortunately, the author does not reveal the length of the experiment, nor does he disclose the number of students involved except in an incidental reference while discussing the findings. Presumably, the achievement test was administered for the second time after a sufficient interval had passed to allow a valid measurement of the students' success in ear-training, but the reader is left to speculate as to the details.

The conclusions of the author may be summarized as follows:

1. Students with high intelligence showed greater improvement then students with low intelligence when the achievement test was administered for the second time.

2. Intelligence and the ability to notate rhythmic patterns are directly and positively related.

3. There is a positive relationship between the aural threshold at 8,000 cycles per second and the "musical ear."

4. "With further study and experimentation, it should be possible to predict with more than a reasonable degree of certainty the probabilities of a person's success in ear-training."

Of the six possible combinations in which pairs of these three variables, aural acuity, intelligence, and achievement could affect one another, four may be immediately rejected. It is scarcely conceivable that aural acuity could affect intelligence, that intelligence could affect aural acuity, that musical achievement could affect intelligence, or that achievement could affect aural acuity.

Can physical hearing ability affect achievement? In the study of ear-training, aural acuity would appear to be a prerequisite. No student could do well if he could not hear the exercises being played. On the other hand, if two students are able to hear the exercises satisfactorily, it does not follow that the one with the lower threshold of hearing will probably do better on ear-training examinations. In other words, unless a student's hearing is definitely deficient, it is difficult to see how it could affect his progress in theory.

Because ear-training is not entirely an intellectual function, but is partially a skill, intelligence does not play as important a role in ear-training as in other academic disciplines. Except for the positive relationship between intelligence and rhythmic notation, Neely found no particular pattern relating intelligence and musical achievement. It may be that rhythmic dictation is a more intellectual aspect of ear-training than other forms of dictation.

Aside from this relationship between intelligence and rhythmic dictation, the author could suggest only that the more intelligent students tended to show greater improvement, and such a conclusion will probably startle no one. Thus, except for some aspects of intelligence and achievement, there appears no reason to believe that there might be interrelationships existing between intelligence, aural acuity, and achievement in theory, and it is not surprising that the author found no such relationships. There is probably a much stronger correlation between intelligence and overall success in music than between intelligence and success in melodic and harmonic dictation.

The principal limitation of the study, as the author recognized, was the small number of participants. In most tables the data are grouped in quintiles, and frequently it is difficult to discern a clear pattern because when the number of cases is small a change in the position of a few can sharply skew a curve. This difficulty is particularly apparent in the many tables where there are no cases in the fifth quintile. When the same data are broken down into deciles, it is even more difficult to find a clear pattern. When warned, for example, that "of the two students in decile 1, one has defective hearing and the other lacks application," the reader is justified in wondering how meaningful conclusions can be drawn.

Neely concludes that the students who have a very low threshold of hearing at 8,000 cycles per second tend to have a good "musical ear," though the meaning of the term "musical ear" is never made clear. One cannot deny that such a possibility exists, but the evidence presented is exceedingly sparse for such a conjecture. The author suggests no reason why 8000 cycles per second should be especially critical in this respect. Perhaps a higher frequency would provide an even more valid indication. Neely has taken measurements at only the usual seven frequencies and discussed the results of only three, of which 8000 is the highest.

The author's final conclusion is that with further study and experimentation it should be possible to predict reliably the probability of a student's success in ear-training. This statement may be perfectly true, but it is an expression of personal opinion and not a conclusion based on the present findings. There is nothing in the study that would provide any basis for such a suggestion.

There are a few other observations that are likely to occur to the reader:

1. Nowhere in any of the statistical treatment has the author mentioned the level of significance of his data. Such information would certainly appear to be called for and would be of great help in interpreting the data. Instead, all the reader is given are vague generalizations such as "these figures indicate fairly clearly that....." The fact that two items vary together is not necessarily an indication that one is dependent upon the other. Item A may be dependent upon item B, item B may be dependent upon item A, both may be dependent upon unknown item C, or they may vary together strictly by chance. The reader is never told the likelihood that the results obtained might have occurred by chance.

2. The achievement test in music is not actually an achievement test in music at all, but merely an achievement test in certain aspects of music theory. It would be helpful if the test were more accurately identified.

3. An achievement test in theory administered to incoming freshmen reveals little except the diverse backgrounds of the students. It could scarcely be expected to show a strong positive correlation with intelligence when most of the students, very likely, had had no formal training in theory. The use of such a test under such circumstances must necessarily be limited to the pretest portion of a pretest and posttest sequence.

4. The commonly accepted meaning of the term "hearing loss" is the difference in decibels between the threshold of a given individual and that of the average of the population for a given frequency. However, the author consistently uses the term to mean the level at which sound falls below the threshold for a given individual at a given frequency.

5. When possible, tables should be labeled so that they may be readily interpreted without extensive reference to the text. The author could perhaps have given more thought to this matter.

6. In tables, particularly tables showing improvement, a dash should be used instead of a zero when there are no entries. The meanings of the two symbols are quite different.

Neely's conclusions are sometimes unsubstantiated by the data presented, and it is clear that a larger number of cases would be necessary to arrive at significant results. In a larger sense, however, the basic premise underlying this study is subject to serious question. Is it really likely that aural acuity, intelligence, and the achievement in theory of incoming freshmen can be used to predict their probable success in theory? Each of these criteria, for its own particular reason, is unfit to undertake such a task. Intelligence no doubt comes closest, but even it falls short. Collectively the outlook is little more promising. Perhaps it is impractical to predict success in such a specialized skill, especially one which has virtually no parallel in the backgrounds of most entering freshmen. Perhaps predicting the overall success of students in music, as in Stanton's well-known Eastman experiment, is the best that can be done. In any event, the author has offered no evidence that would suggest that his approach is a valid one for the purpose of predicting success in theory. Even the knowledge that no relationship exists is useful, but as a Ph.D. dissertation this study, regrettably, contains more than the usual number of procedural and reportorial flaws.

On the other hand, Neely has used an imaginative and original approach to a specific aspect of a problem that has troubled music educators for many years. Imagination and originality are two qualities sorely needed in educational research in order to avoid the monotonous repetition of the same stereotyped procedures that have characterized many research efforts in the past.

Nelson, Cecilia R. Televised Music Instruction for Second Grade. Teachers College, Columbia University, 1963.

Reviewed by Marilyn Pflederer

The purpose of Dr. Nelson's doctoral project was twofold: to produce materials that classroom teachers would find useful in teaching music and to improve the quality of music instruction via the television medium. Accordingly, she prepared (1) a teachers' guide for a full year of weekly second grade televised music instruction and (2) selected lesson scripts to illustrate the function of visuals in the telelessons.

To establish a rationale for her study, Dr. Nelson considered trends in both general education and music education. She defined excellence as the primary trend in education today.

> Excellence is that quality which permits human beings to live with awareness of transcendent possibilities and thus, to make decisions that are fruitful for further discovery of truth. Excellence is that quality which enables people to apply ways of knowing to the vastness of what there is to know--not to know more in order to have more, but in order to live more abundantly. (p. 4)

Excellence in music education is seen as a quality which contributes to the good life. Growth in musical excellence should be realized through actual acquaintance with music. Here Nelson quotes the Leonhard and House constellation of musical behaviors, knowledges, understandings, skills, attitudes and habits, as areas in which excellence should be pursued.

Dr. Nelson sees the telelesson as a tool which provides an indirect way to promote musical excellence. Its place and function within music education is "to use television as an art form which can intensify music learning situations and reveal musical truths in new dimensions." Pace has said that "television succeeds because it takes students right up to the crest of the situation. Before they know, they are in it." (p. 9)

Dr. Nelson's next task was to determine "appropriate" musical growth for second graders in the Eugene, Oregon, Public Schools. An advisory group from the Eugene Schools was formed to work with her to determine musical expectations for second graders and to consider the role of television lessons and the television guide in the total second grade music program. It was recommended that there be one television lesson per week, of 15 or 20 minutes duration. The music program would be continued by the classroom teacher the other four days. This kind of schedule would also utilize television instruction in the in-service training of the classroom teacher.

With these recommendations Dr. Nelson prepared the Teachers' Guide, a series of 31 lesson outlines. These were revised according to further recommendations by the advisory group. This revised Guide is Part II of the dissertation. Each of the 31 lesson outlines includes (1) a list of music to be used; (2) learnings to be highlighted; (3) leading questions to stimulate creative piano keyboard experiences; and (4) follow-up suggestions.

At the end of each set of six lesson outlines an instrument to measure the technical aspects of the telelesson was provided. This questionnaire was devised to answer questions pertaining to content, arrangement, level of difficulty, use of visuals, vocabulary and pace. An instrument to measure pupil growth was provided after lesson 15 and after the final lesson. The questions asked on the midyear and final inventory were the same; the musical examples differed. This test had face validity; its reliability was unchecked. In ascertaining pupil growth the words "most," "many," and "same," were arbitrarily defined by the researcher in terms of percentages.

Part III of the dissertation consists of the complete television scripts for lessons 1, 2, 5 and 31. The final draft of each script was prepared in consultation with the director and producer of the series. These scripts reflect careful consideration of action, visuals, camera work and the set itself.

To evaluate the telelessons Nelson applied the 15 criteria for judging aesthetic worth established by Phenix. These are as follows: unity (organizing idea), variety (combination of audio-visual stimuli in different ways), harmony (relevance of elements to central purpose of the lesson), balance (each part of the whole must be in proportion needed according to the purpose of the whole), functionality (workable on television medium), finesse (skillful and imaginative use of materials), meaning (in relation to central purpose), depth (achieved through intensification of impact and from repetition), intensity, expressiveness, ideality (selection and simplification for expressive effect), sincerity, purity, righteousness, and truthfulness.

Dr. Nelson reommended that plans for in-service training meetings before and after the telelessons be pursued. She suggested that research is needed in the following areas: (1) the amount of repetition of material presented via television required in the classroom; (2) the effect of the presence or absence of the teacher during a telelesson; (3) the results of new variables (not enumerated by Nelson) introduced through televised instruction in terms of learning and controls.

Comments

Dr. Nelson is to be commended for choosing a topic that has current worth. Music educators should be aware of the contribution that new media can make to imaginative and creative teaching. Her introductory remarks and rationale for the study reveal that she is well-read and aware of contemporary modes of thought in the education literature in general and music education literature in particular. Her discussion of the telelesson scripts was most interesting. In terms comprehensible to the layman she presented actual scripts from which the director worked.

Ideas to stimulate creative keyboard experiences were welcome and adequate. Second grade children need to be involved with concrete experiences in music. They need to manipulate, to experiment with the sound stuff of music. The piano affords an explicit means for the kind of experimentation which furthers understanding of melodic concepts and intervallic movement. The selected television scripts gave some ideas as to how Dr. Nelson would approach this activity.

The two instruments for ascertaining student growth in musical knowledge, skills, understandings, et al., were specific and comprehensive. Too often our behavioral objectives lack the specificity required in order to be used as effective evaluative tools. Dr. Nelson did not make this error. She was able to devise test items in terms of the musical expectations determined by her and the advisory group. Also worthy of commendations were her many questions to test the aural discrimination of the students.

With the exception of the keyboard experiences, however, the Teachers' Guide proved to be disappointing; for it was reflective of no new or challenging ideas. Rather it was like putting "old wine in new bottles" (to invert a well-known analogy). As a result, portions of the selected telelesson scripts were contrived, trite, and pedestrian.

For follow-up lessons Dr. Nelson still advocates such extra-musical ideas as making hand puppets to accompany MacDowell's Of a Tailor and a Bear and finger painting while listening to the "Arabian Dance" from the Nutcracker Suite. Little contemporary music was suggested. Imagine the interest and resultant musical learnings from a television lesson devoted to Stravinsky's Circus Polka or Copland's The Red Pony.

A fine new medium awaits the artist teacher. Those who have viewed the Leonard Bernstein Young People's Concerts have an idea as to what television can do in promoting musical growth and interest. This reviewer would like to suggest that music educators plan imaginative and artistic ways of opening doors via television to the "wonderful world of music" for children.

Nuccio, Donald J. A Proposed Program of Preparatory-Terminal Music Experience for the School District of Somers, New York.* Teachers College, 1960.

Reviewed by Harvey Maier

The primary concern of this project is the development of an educationally sound music program that will economically and efficiently fulfill the musical needs of the school district of Somers, Westchester County, New York. A further aim is to develop and apply an approach to music education for any child in any school situation. The approach concept is termed "preparatory-terminal" in order to apply the aim of the project to any student of any age and at any level of accomplishment. The "preparatory-terminal" experience may be defined as an organized musical situation to meet the immediate needs of the participant. The experience situation is organized for the encouragement of the participant's continued endeavors in music in the light of his understanding. The experience may be terminal in that it is complete in itself and provides the desired aesthetic response; or it may be a preparatory experience leading to further exploration and, presumably, to a higher level of musical achievement.

The task of fulfilling the musical needs for Somers is in itself no small order; and when one attempts to propose a program of music education for national consideration, one finds the development of such a program with its variants quite a challenge for any researcher. In addition, the financial feasibility for most school districts and the newer educational tenets herein expressed would challenge the wisdom and ability of school boards who activate this program to justify their acts to their constituents. Rather, paraphrasing Mursell's statement on page 23 of this thesis, "a small progressive step well defined and documented which will lead to the achievement of the overall goal is better than to try to encompass everything at one time."

The dissertation is considered in five chapters. Chapter 1 is introductory, considering the various problems that served as a guide to the development of a program of a program of music education. The second chapter is concerned with the development of the approach to the problem. Chapter 3 presents a program of possible musical experiences for the elementary school, the junior high school and the senior high school. The fourth chapter deals with the implementation of the program and ideas of organization that serve as a guide in the ordering of the curriculum. The dissertation closes with implications for further study.

After the introduction Nuccio states that the aim of his preparatory-terminal approach stresses education through music rather than the development of performing specialists. Skills are used only when it seems pertinent to the learning situation. The pupil's present musical status is evaluated at the beginning of the year and then expanded or increased by providing additional understandings to lead to greater musical growth.

This theory that educational growth can only be stressed through exploratory music, is rather an indefensible tenet. It can be argued that good teaching, sound educational learnings and total student involvement can take place while working with students in a good band,

*Columbia University, 1960, not available from University microfilms.

choir, or orchestra. This reviewer feels that the teacher is the primary answer to the situation rather than the content of the curriculum--although that, too, is important.

In discussing the elementary level, rhythmic movement, singing, instrumental participation, listening and performance were listed. Creativity, a most important area in the overall musical program, was not mentioned, as such, for any level. Although creative ideas were proposed in general, it may have strengthened the dissertation to have given greater stress to creativity as a separate activity.

Survival of cultures and nations depends upon man's ability to make changes, to meet changes, and to adjust or control them. This requires flexible, creative minds. Research has disclosed that creativity is a way of thinking and of confronting problems that is transferable from one type of experience to another.[1] Nye says, "Music, with its varied activities, offers unique possibilities for children to learn to be creative on their own levels of development. ...Creativity takes place whenever the child discovers new relationships and whenever he projects himself into an activity and makes something that at the time belongs uniquely to him."[2]

The elementary program is otherwise well written and presented in a thoroughly satisfactory manner. The 27 pages devoted to elementary, 13 pages to junior high, and seven pages for senior high school, might show the author's greatest area of concern and interest.

In conclusion, an interesting study was presented concerning the use of percussion instruments (drums) and records in teaching music; reminiscent of the Wersen method of some years ago.

Mention is made several times throughout the paper of the New York State Handbook of Applied Music. It would seem a stronger presentation to the reviewer if the section of the handbook pertaining to the discussion were reproduced in the appendix. Mr. Nuccio becomes very indefinite at times when mentioning this handbook, note pp. 50, 52, and 54. With regard to the relative stress placed on problems of national and local scope in this thesis, perhaps too much local reference is inserted for the out-of-state reader without due clarification.

The general music program of the junior high school is dependent upon the development of the child's musical interests in the elementary grades. Nuccio gives great stress, and justly so, to individual use of music for the enrichment of daily living. He suggests starting with the individual's prejudices as they reflect his musical status. Beginning with these prejudices, the teacher then plans for the qualification, clarification, and expansion of the student's interests. This is an interesting approach, although a more musically positive beginning might prove to be a better technique.

The general music program for junior high school is delineated clearly. However, a greater development of content is needed concerning changing voice problems which, in these years of growth, are of paramount importance to the junior high student. "How can we identify the coming change?" "What is happening?" "Why?" "When is it to be expected?" "How long will it last?" "How is it treated?" "What do we do to keep them singing?" These and related questions from the concerned teenager and his teacher need further clarification. The use of the Stroboconn and the use of acoustics would be two interesting variants for the "changing voicer," yet it is believed that the early teenager could use more personal assistance, guidance, and understanding during these vocally formative years than was mentioned in this paper.

The paragraph (bottom of page 68) concerning acoustics and the range of orchestral instruments seems out of place in discussing the changing voice.

Whether the music for the concert is of greater importance to the parent than the visual aspect of seeing his "son in concentration over a horn" is a question raised on page 81. Nuccio varies from the concept of music education to the concept of the conservatory. The first paragraph says that having something to see besides the director actively conducting is less important than watching the performers read music. The second paragraph states that "music is the highlight" rather than gaudy uniforms. Then on page 83 he invites individuals who have had a fearful experience with music to be actively brought into the program by playing on some instrument that they have secretly longed to play. This volunteer, after a lesson on the horn during intermission, would then join the band to play a selected composition. We must agree that that would be something to see and hear! Yet, we doubt very much if music would be the important thing in that situation.

Concerning performing organizations in the senior high school, Mr. Nuccio goes on to say, "Public performance becomes a burden and tends to negate the educational aims when (1) the school administration insists upon a good display for the betterment of public relations; and (2) the conditioned public demands a show that competes with the commercial mass media."

This sentence might lead us to believe that Mr. Nuccio does not favor a fine sounding band, orchestra, or chorus performing suitable music in an artistic manner. Or, that the public would not favor such a program and, perhaps, that the administration would not consider this type of program a "good display for the betterment of public relations."

Mr. Nuccio, earlier in this paper, stresses the need for a better general music program in our public schools. We must agree that this area is highly neglected above the sixth grade and too often receives only lip service in grades 1 through 6. That all students do not have the same desire to excel in music is also a well-known fact. The preparatory-terminal experience is ideal for these students since it begins at their present level of ability and interest and permits them to progress as far as they desire; be it one lesson or several. However, there are students who do desire to excel in music. These are the singers in our choruses, the players in our bands and orchestras, and the many soloists on other instruments. For them we must provide the opportunity to strive toward their goal of greater excellence in music.

A performing school organization (band, orchestra or chorus) can achieve all educational aims in its drive for artistic perfection. True, the demands for the instrumental groups at football shows and parades is musically limiting to the students; but this is only a small part of a properly conducted instrumental program. The greater part of the music program can satisfy to some extent the needs and interests of all the high school students. The public will rise to the challenge of quality in a good concert; therefore, the fear of competition with mass media need not be a factor. As for concerts being a burden, we should think it a privilege to dare the students to rise to the challenge of artistry.

Ideas for the implementation of the program are clearly outlined. The plans are carefully drawn to include all areas of interest: the people, the school board, the administration, the teachers, and the students.

In speaking of the school board's primary focus, that of determining school policy, no mention is made as to how to influence the board toward a trial of this program. The suggestion of "a little, well done" seems appropriate again.

This "little, well done" would negate the expressed need for doubling the music faculty at Somers in order to carry out the extensive program proposed herein. However, at the same time, it presents to the board the challenge of the future whose concept carries with it the fulfillment of the needs and desires of all the people of their community. This need coming from the people could more easily be translated into action than a concept superimposed by the administration; a concept perhaps not clearly understood by all.

The package plan of musical activities given in Appendix A lists in diagrammatic form the courses to be offered under the guidance of this thesis. The package plan is well conceived and certainly covers the areas desired for exploration and performance. A community fortunate enough to have such a variety of offerings in its curriculum would certainly have greater assurance of meeting the music cultural needs of its children than present day average communities.

Mr. Nuccio has a well-written paper. His thesis, the idea of music for all the people, is undisputed. How he means to obtain this objective is open to question in a few instances.

If his ideas on general music in the junior high school could be expanded and adapted to the senior high and taught with the same philosophy of "can do," this one innovation would result in a giant step forward toward cultural growth for all students. However, we must also have our performing organizations attaining the highest degree of excellence possible. The standards of excellence for some must not be sacrificed on the altar of mediocrity for all.

Mr. Nuccio has pointed up one of music education's most perplexing problems: "What do we do for the general student?" Many ideas have been advanced and this paper presents another. If this manuscript causes us only to think more deeply on the topic, then the project has been worthwhile. If music is ever to achieve its complete stature and growth, it must look to other methods in addition to those now being used. Music has something for every child in every grade. There must be a way to teach music in an interesting manner to every child, especially in junior and senior high school. The search will continue until the answer is found. We thank Mr. Nuccio for his contribution on a most timely subject.

References

1. Viktor Lowenfeld. "Recent Research in Creative Arts," National Education Association Journal, (November, 1958) pp. 538-40.

2. Robert E Nye and Vernice T. Nye. Music in the Elementary School, New Jersey, Prentice-Hall, Inc., 1964, pp. 4-5.

Olson, Rees G. A Comparison of Two Pedagogical Approaches Adapted to the Acquisition of Melodic Sensitivity in Sixth-Grade Children: The Orff Method and the Traditional Method. Reviewed by Katherine Crews. Indiana University, 1964.

The purpose of this study was to compare adaptations of two classroom music methods, the Traditional Method and the Orff Method, for their effectiveness in the development of melodic sensitivity in sixth-grade children. The principal objectives established were to determine the following: (1) if there would be a gain in melodic sensitivity (as measured by instruments devised for this research) as a result of the instruction, (2) if one of the two methods would be superior to the other in this respect, and (3) from an analysis of the children's responses on the Test of Melodic Sensitivity if phenomena would be revealed pertaining to the perception of melody.

The term melodic sensitivity indicated abilities to do the following which were identified for development and measurement: (1) reproduce melodies, (2) discriminate between like and unlike phrases, (3) hear and represent the general melodic contour, (4) relate melodies with their notation, and (5) follow melodies in listening. The method labeled by the author as the Traditional Method is one based largely on the views of James L. Mursell, which involves the following distinctive characteristics: music-centered, developmental, cyclical, proceeds from the concrete to the abstract, creative, includes drill, and is balanced. The description of the Orff Method includes a history of how Carl Orff developed this approach. It involves and stresses the following distinctive characteristics: simplicity, spontaneity, basic elements of music, ensemble performance, and both singing and playing melodies.

The review of the literature related to melodic sensitivity includes a thorough presentation of studies which are directly related to the objectives and procedures of the experiment. Areas presented are (1) the importance of melody, (2) the nature of melody, (3) the perception of melody, (4) the development of melodic sensitivity, and (5) the measurement of melodic sensitivity.

The procedures followed in the experiment included selection and matching of two groups of sixth-grade children, preparation and presentation of the lessons, construction of the tests (including statistically significant estimations of their reliability and validity), and administration of the tests. Both sets of lessons and the tests were piloted, using children in the same schools as the study group children, and were subsequently revised.

The experiment employed a matched group procedure in which two groups, each of 26 sixth-grade children (14 girls and 12 boys), were compared as to verbal I.Q., nonverbal I.Q., musicality, melodic memory, musical environment, musical aptitude, school music experience, and socio-economic status. No significant difference was found to exist between the two groups on any of these variables. The children came from two similar schools of the Centralia School District, Buena Park, California, and both groups were composed of children who had been identified as having the highest academic achievement in their schools. Tests used in matching included The Lorge-Thorndike Intelligence Tests, Level 3, Form A,1/ the Gaston Test of Musicality,2/ Wing Standardised Tests of Musical

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1/Irving Lorge, and Robert L. Thorndike, The Lorge-Thorndike Intelligence Tests, Level 3, Grades 4, 5, 6, Form A, (Houghton Mifflin Company, 1957).

2/E. Thayer Gaston, Test of Musicality, (Lawrence, Kansas: Odell's Instrument Service, 1957).

Intelligence, Test 3,[3] and the SRA interest inventory, What I Like to Do, Part B.[4] The children of both groups were in classes in which all the music was taught by the classroom teacher with only occasional help from a music consultant. All classes in this experiment were taught by the investigator who had several years experience in teaching music including five years as music supervisor in the school system where the experiment took place.

Eighteen lessons were prepared for each of the methods and were presented in thirty-five minute sessions on Monday, Wednesday, and Friday afternoons extending over a seven-week period (seven rather than six because of school holidays and illness). The approach followed in developing the lessons for the Traditional Method was suggested by the California Teachers Guide to Music in the Elementary School.[5] Lessons for the Orff Method were based on materials and techniques adapted from Carl Orff's Music for Children.[6]

The Tests of Melodic Sensitivity included the following five tests which the investigator developed from piloting and revising nine tests for use in this experiment: "Outlining the Melody Graphically," "Recognizing Like and Unlike Melodic Patterns," "Associating a Melody with Its Notation," "Reproducing Melodies by Singing," and "Recognizing a Melody in an Orchestral Composition." The first three were group tests, the fourth was individually administered, and the last was administered to three children at a time. Each is a measure of one of the five abilities isolated for development and evaluation. Another test, "Recognizing a Melody When Replayed After Listening to Other Melodic Material," was given to the two groups of students but was discarded before final analysis of data because of low reliability.

An analysis of the pretest and posttest scores revealed that a significant gain was made by children of both groups on each of the tests. A comparison of the amount of this gain, however, revealed no significant difference in favor of either group of children. The gain on each of the individual tests was significant at the .01 level of confidence for both groups with two exceptions. The gain made by the Traditional group on "Reproducing Melodies by Singing" and by the Orff group on "Associating a Melody with Its Notation" were significant at the .05 level. A comparison of the amount of gain made by the two groups showed that the Orff group made a slightly greater gain on the total score, but this difference in gain did not approach significance at the .05 level of confidence. The greater gain made by the Orff group on "Reproducing Melodies by Singing" was significant at the .05 level. On all of the other tests, the difference was well below the significance level, so it was concluded that neither method showed superiority over the other for the development of melodic sensitivity.

The following phenomena were observed: (1) In singing back a melody, less than half of the children improved their performance on the second trial, (2) In the test "Reproducing Melodies by Singing" there was a definite tendency for

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3/Herbert D. Wing, Standardised Tests of Musical Intelligence,(Sheffield, England: Principal City Training College, 1961).

4/What I Like to Do (Chicago: Science Research Association, 1954).

5/Marion Jordalen and Harold Youngberg, Chairman, Joint Committee of the California Music Educators Association and the Music Committee of the California Association for Supervision and Curriculum Development, Teachers Guide to Music in the Elementary School, California State Department of Education (1964).

6/Carl Orff and Gunild Keetman, Music for Children, English adaptation by Doreen Hall and Arnold Walter, Volumes I-V and Teachers Manual (New York: Associated Music Publishers, 1956-1961).

children when singing the fourth melody in the test to return to E as the fourth tone as a substitution for the A which was the tone played, and (3) In the same test the seven-tone melody was sung correctly by 49 children, and the eight-tone melody by only five children, indicating that perhaps the number of tones which can be retained in memory had been surpassed for most of the children.

It was hypothesized that the following techniques contributed to the development of melodic sensitivity as measured in this experiment: having children (1) hear the melodies and sing them by rote, (2) aurally discover like-unlike and distinctive melodic patterns, (3) reproduce the sound of part or all of the melodies on resonator bells or xylophone, (4) find and follow the notation of the melody, (5) sing back portions of the melody with a call-response or echo procedure, (6) represent the pitch movement of the song with vertical and horizonal hand motions. The investigator suggested that any teacher who has had experience with both methods will tend to assimilate the most effective procedures of each.

Olson's use of the term "Traditional Method" is somewhat misleading particularly to those who tend to think of traditional as a method which places strong emphasis on music reading. However, since he does offer a detailed explanation and definition, one cannot quibble, except that only those who read the dissertation would know that his Traditional Method is more developmental than traditional, in the usual sense of the word. His own summary in Dissertation Abstracts gives no definition of his Traditional Method. He points out in the study that the Traditional Method "functions in contrast to a mechanistic point of view by which a teacher would present knowledge and skills step by step, each one to be mastered before going on to the next" and states that the concept of "readiness" for music reading is incompatible with this approach. There are other characteristics of his Traditional Method that tend to be misleading, such as the fact that he defines this method as creative--a term many people would not associate with traditional. In the dissertation, however, he clearly defines each of his methods.

Carl Orff himself does not wish his approach to teaching to be called a method.7/ Olson makes it clear that his Orff Method is an adaptation of the Orff approach. There are several reasons why one might wonder if perhaps the adaptation has departed so far from Orff's original intentions that the results of the study might be misleading. For instance, in describing the instruments used in the Orff Method, Olson says, "Soprano and bass resonator bells were used as a substitute family of instruments in place of the Orff metallophones and glockenspiels." These are important instruments in the Orff approach, and since substitute instruments such as these often are not compatible with the Orff instruments--particulary in pitch and tone quality--their use may have had a significant effect on the results of the study.

The Traditional Method is described as including drill, but only the Orff Method lesson outlines include review of any specific material from one lesson to another. Each of the Traditional Method lessons contains one song and one orchestral recording selected so that each is related in some way to the other. There is nothing in the Traditonal lesson outlines to indicate any relating of one lesson to another--just presentation of the materials.

Olson's thorough study and presentation of the related literature is commendable. A comprehensive bibliography is included. The tests devised for this experiment underwent thorough trial, extensive statistical analysis, and very careful revision and refinement. Because of this and the dearth of adequate means to measure melodic sensitivity, these tests are a greater contribution to the field that are the results of the experiment.

7/Carl Orff, "Orff-Schulwerk: Past and Future," Music in Education (September-October, 1964), reprinted in Perspectives in Music Education, MENC Source Book III, (Washington: Music Educators National Conference, 1966).

Ottman, Robert. *A Statistical Investigation of the Influence of Selected Factors on the Skill of Sight Singing*. North Texas State College, 1956.

Reviewed by Merrell L. Sherburn

A reader who opens this thesis expecting to find information relative to various methods or techniques of sight-singing training should reread the title. He will discover that it does not imply an investigation of pedagogical procedures but that it precisely describes the research that has taken place; namely, a statistical study of the relationships certain selected sets of data bear to a criterion set.

The criterion set in this case consists of the scores made by 52 subjects on a moderately difficult sight-singing test. The subjects were sophomores in the School of Music at North Texas State College in the spring of 1955. The test was a melody by Cherubini from Volume 3a of *Solfege des Solfeges*, containing representative problems of sight singing: scalic and chordal passages; nonchordal leaps; all intervals except diminished fifth and minor seventh; modulation; and very moderate rhythmic problems. It was administered to each subject individually by a procedure that was as objective and uniform as possible.

Against these criteria scores were correlated the scores on three standardized tests and 12 original tests devised by the author. Two questionnaires were also included in the comparisons--one pertaining to a faculty evaluation of each subject and one containing the subject's own evaluation of his ability and background.

The standardized tests used were: (1) *The Seashore Measures of Musical Talent*--the sections on pitch, memory, and rhythm, (2) *The American Council on Education Psychological Exam for College Freshmen*--an intelligence test, (3) *The Nelson Denny Reading Test*.

The original test consisted of: (1) The Ottman Extension of the Tonal Memory Test (the author felt that the Seashore Test was not challenging enough for music majors), (2) A Tonic Memory Test, (3) A Melodic Modulation Test, (4) A Melodic Dictation Test, (5) An Isorhythmic Tonal Dictational Test (melody without rhythm), (6) A Test of Isolated Intervals, (7) Intervals Against a Harmonic Background, (8) Intervals in Melodic Sequence, (9) Visual Recognition of Intervals, (10) Interval Spelling, (11) A Test on Diatonic and Chromatic Major and Minor Seconds, (12) A So-called "Music Literacy" Test which could more properly be called an error detection test. It consisted of the subject's recognizing errors in performance as he followed a score.

The correlation coefficients between the criterion test and the 17 variables, along with the levels of confidence, are given in the following table.

Test	r	level ±
Seashore Tests		
a. pitch	.300	.05
b. rhythm	.208	.15
c. tonal memory	.219	.15
Ottman Extension of Tonal Memory	.213	.10
ACEP Exam for College Freshmen		
a. raw	.203	.10
b. percentile rank	-.079	. 5
c. quantitative	.182	.10
d. linguistic	.180	.10
Nelson Denny Reading Test		
a. raw scores	.018	. 9
b. percentile rank	-.068	. 6
c. vocabulary	.285	.05
d. comprehension	.003	. 9
Music Literacy (Error Detection)	.733	.01
Interval Tests		
a. isoldated intervals	.614	.01
b. intervals with harmonic backgrounds	.638	.01
c. intervals in melodic sequence	.603	.01
d. interval recognition (flash card)	.225	.10
e. interval spelling	.261	.10
f. diatonic and chromatic major and minor seconds	.636	.01
sight recognition	.235	
singing	.836	
Musical Dictation (Nonrhythmic)	.520	.01
Musical Dictation with Rhythm	.646	.01
Melodic Modulation	.562	.01
Tonic Memory	.387	.01
Subject's Self-Evaluation	.499	.01
Faculty Evaluation	.517	.01

Ranking the variables in order of importance produces the following table:

Music Literacy (Error Detection)	.733
Interval Tests 1-6	.678
Subject's Self-Evaluation of His Sight Singing Ability	.622
Melodic Dictation with Rhythm	.646
Interval Tests (Harmonic Background)	.638
Interval Tests (Diatonic Major and Minor Seconds)	.636
Interval Tests (Isolated)	.614
Interval Tests (Melodic Sequence)	.603
Melodic Modulation	.562
Melodic Dictation (no rhythm)	.520
Faculty Evaluation	.517
Active Musical Participation	.499
Tonic Memory	.387
Self-Evaluation of Musicianship	.352
Precollege Experience	.313
Seashore Pitch Test	.300
Interval Test (Spelling)	.261
Interval Test (Flash cards)	.225
Ottman Tonal Memory Test	.213
Seashore Rhythm Test	.208
ACEP Intelligence Test	.203
Self-Evaluation of Ambition	.028
Nelson Denny Reading Test	.018
Subject's Interest in Sight Singing	-.153

All coefficients above .354 are significent at the .01 level; from .273 to .353 at .05 level; less than .273 not significant.

The author has also included tables indicating the relative weights of those factors that were statistically significant (.300). The weights are expressed in partial regression coefficient (Beta).

Test	Beta
Music Literacy (Error Detection)	.4382
Interval Tests 1-6	.3489
Melodic Dictation	.0637
Melodic Modulation	.2225
Melodic Dictation (Isorhythmic)	-.0101
Faculty Evaluation	-.0138
Tonic Memory	-.2622 (Sic!)
Seashore Pitch Test	-.0011

A second table breaking down the interval tests and comparing them with the other two heavy factors--literacy and melodic modulation--revealed the following coefficients:

Test	Beta
Music Literacy	.3845
Melodic Modulation	.2658
Interval Test 1 (Isolated Intervals)	-.0476
Interval Test 2 (With Harmonic Background)	.1637
Interval Test 3 (Within Melodic Sequence)	-.0444
Interval Test 6 (Diatonic Major and Minor Intervals)	.2120

From these tables the author infers that music literacy (error detection), melodic modulation, and the harmonic background interval test loom up as exceedingly important in indicating sight-singing ability.

From the data contained in the preceding tables, Ottman has drawn five major conclusions: (1) Performance on standardized musical intelligence and language tests shows no significant relationship with the ability to sight sing as measured by the criterion test. The test found to correlate most closely with the criterion was the Seashore Pitch Test; but the coefficient was only .3 at the .05 level. (2) The music Literacy Test (error detection) showed the greatest relationship. It was high in both correlation and weighting. (3) The interval tests indicate that success in sight singing is more closely allied to aural ability in intervals than on theoretical knowledge of intervals. (4) Ability in music dictation, perception of modulation, and tonal memory all correlate highly with the ability to sight sing. (5) Subjective evaluations of talent and ability on the part of both the subjects and faculty in regard to the subjects correlate highly with sight-singing ability.

This research endeavor, as good research often does, produced more questions than answers. The author suggests further investigation as follows: (1) A similar study taking into account the rhythmic factor. (2) A study using Gestalt-Type Tonal Memory Tests rather than non-Gestalt types. (3) While neither standardized nor original musical tests correlateshighly with intelligence tests, it has been shown that musically successful persons score highly on intelligence tests. This paradox should be cleared up. (4) Two contrasting factors on the intelligence test; the quantitative and linguistic both showed very low correlation. Is there any significance here? (5) Why is there poor correlation between sight singing and language reading scores when skills in each are dependent upon common factors? (6) Why did "vocabulary" correlate more highly than "paragraph comprehension"? (7) Could not a music literacy test be developed as an instrument of prognosticating sight-singing ability? (8) Music literacy suggests the nature of training material that could be developed for sight singing and its evaluation. (9) Is musical intelligence a quality differing from intelligence measured by the usual standardized tests?

(10) This research indicates the need for a study of the relative difficulties of intervals. (11) Further clarification of the high correlation between interval test 6 is needed. Is it because both tests measured sight singing or because of the influence of the major and minor seconds? (12) Melodic modulation was very heavily weighted. This means that some element is very closely related to sight singing. (Reviewer's note: Since this is more of a test of tonic retention or awareness than of modulation, it is indeed very much in need of statistical clarification.) (13) Further tests of tonic memory based upon both harmonic and melodic principles should be devised and tested. (Reviewer's note: Here Ottman shows his doubt of the significance of statistical results when experience seems to indicate otherwise.) (14) Why was the interval test involving harmonic background so influential? (Reviewer's note: Here Ottman is again revealing that experience shows the harmonic sense to be important.) (15) More research of a similar nature is badly needed.

Critique

Readers of theses who search for information often derive as much benefit from peripheral areas as from the main proposition. The thesis under consideration contains two fringe benefits that should be of definite value to anyone interested in the problems of sight singing and its teaching. One is a historical survey of the theoretical writings and practices pertaining to the subject. This would make an interesting article in itself. The other is an exceptionally good review of experimental literature up through 1955. While the bibliography cites mainly secondary sources, it can serve as an excellent point of departure for anyone interested in further historical or experimental research in the area. These rather obvious facts are mentioned only because sight singing, especially at the college level, has captured less of the attention of the researchers and experimenters than the related area of dictation. Who can say that of these two related skills it is not really the more important?

Now as to the main point: the experienced teacher of musicianship and sight singing will read the report of this research with many raisings of the eyebrows as he finds some of his sacred precepts challenged. He will find many "bones to pick" either with the statistical inferences or with the methods of testing. It is with the latter that this reviewer wishes to take issue, and in this respect will limit himself to one or two major points of criticism. This may reveal a serious flaw in the whole experimental procedure and inference.

It has been the contention of teachers of ear-training and musicianship (to this one at least) that one of the most important attributes of musical talent and the central aim of all ear-training is the power of musical imagery. This power presupposes the ability to think music, and through rudimentary knowledge of musical theory, to associate the appropriate notational symbols with the sounds they represent. The act of sight singing is a vocal expression of this power (the fact that it is vocal opens up a completely new area of variability in any attempt to measure the power). It is inconceivable that the notational symbols could call this power into play without enough theoretical understanding of these symbols to be able to interpret their meaning into sounds. Yet Mr. Ottman's study showed a very low correlation between theoretical analysis and the actual ability to sight sing. Perhaps his method of giving the criterion test may throw some light on this.

This writer has always been taught--and now teaches--that the most important part of sight reading, whether singing or playing, is the short period of study that takes place before the actual performance begins. All music reading contests provide for this period; and any observation of an experienced musician approaching a new piece will reveal that some sort of preliminary overview is necessary and desirable. It would seem that an efficient use of this preview would depend not so much upon the player's technique but upon his quick theoretical grasp of the meaning of the notes in terms of his training and experience. This reader was unable to gather, from Mr. Ottman's description of the administration of the criterion test, that such a short period of study was provided. The quoted directions implied that the subject was expected to start singing as soon as he saw the music. This being the case, there was considerably less opportunity for intelligence and previous training to come into play. Instead, the subject was plunged into a note-to-note sequence of motor responses much as a beginning typist, with only a certain native pitch sense to aid him in interpreting the notes. Could this not account for the low correlation with the intelligence test and the theoretical interval analyses?

In this connection also we should like to point out that neither of the so-called "intellectual" interval tests using isolated intervals on the flash cards involve visual comprehension in a reading situation. A test demanding a rhythmic response in the analysis of a succession of intervals in a melody, at a given tempo, would be much more revealing of the subject's command of the theoretical recognition of intervals necessary for sight singing.

But is this visual recognition of intervals as unimportant to sight-singing ability as Mr. Ottman's findings seem to imply? This is one set of statistics that would be more meaningful if more had been said about the subjects' background training in sight singing, and how they were taught to approach the problem. Was the emphasis on abstract intervals, on strong tonic orientation, or on modal-diatonic relationships using the syllable La or scale No. 6 or minor tonic? Has the subject been taught to think primarily in scale relationships or in chord outlines? Were they consistently forced to analyze with syllables and/or numbers throughout their training, or were they allowed to lapse into the guesswork of neutral syllables and letter names as their training progressed? The facts revealed by the research are facts, but it would be desirable to be able to consider them in the light of what the subjects brought to the experiment in the way of training.

And one final observation while we are on the subject of intervals. Why were not interval tests 1, 2, and 3, the "musical" responses, correlated with tests 4 and 5, the "intellectual" responses? A cursory perusal of the individual scores of table 13 makes one suspect that there might be some correlation.

Just as the criterion test was given without a period of prestudy, so was the so-called literacy test--detecting errors as a performance deviates from the score--given with no indication of preliminary study.

This observation suggests the most serious flaw in the experimental procedure and conclusions.

The ability to sing at sight and to compare a score with a performance (discounting purely vocal problems) involves essentially the same skill--that of musical imagery, previously mentioned. This power of imagery makes it possible to call up the mental concept of the sounds represented by the symbols, in the one instance for purposes of vocally producing the sound, and in the other, for purposes of comparing the sound with an outside source. We submit, therefore, that the test on sight singing and the test on error detection were tests of essentially the same element. This becomes the more obvious when we consider that the same melody was used for both tests. That the criterion melody was transcribed to different note values and transposed to a different key does not alter the fact that the same set of imagery problems was presented. Any correlation of the scores of these two tests is almost the same as a correlation of the scores of the same test taken at different times. The wonder is that the coefficients were not higher.

These observations may suggest the nature and direction of further research in the area of musicianship, probably at the post-doctoral level and on a much larger scale than could be accomplished in predoctoral research. Viz: just what is the process by which one learns to sight sing and take musical dictation? And to what extent are these skills necessary for the successful musician? Much research is now underway in the area of dictation, but to this writer's knowledge the area of sight singing lags far behind. Perhaps this is because of the difficulty of objective testing. With the proper use of a voice-actuated tape recorder this difficulty could easily be overcome.

New theory teachers sometimes feel that they have found the answers after a year or two of practice. More experienced ones are happy just to come up with a good question once in a while. Mr. Ottman's thesis has raised quite a few good questions.

Parker, Olin Griffith. *A Study of the Relationship of Aesthetic Sensitivity to Musical Ability, Intelligence, and Socioeconomic Status*.* University of Kansas, 1961.

Reviewed by Charles L. Hoffer

The design of Parker's study is a relatively simple one. Through the use of the best available tests he attempted to determine the correlation between aesthetic sensitivity and three factors that may be related to it: musical ability, intelligence, and socioeconomic status.

Aesthetic sensitivity was evaluated through the use of Section II of Wing's *Tests of Musical Ability and Appreciation*.[1] Music ability was tested by Gaston's *A Test of Musicality*. Intelligence quotients were obtained from the scores received on group paper-and-pencil tests such as the *California Short Form Test of Mental Maturity* that the schools had already administered as a part of their testing programs. Socioeconomic status was rated by using "The Occupational Rating Scale" developed by Warner. Parker gave ample justification for the selection of each test.

Subjects were selected from Kansas high schools of various size classifications. Each classification was represented in the sample by roughly the same proportion of students as would be found in corresponding categories on a statewide basis. A total of 1,123 students was tested.

Parker arrived at the following second order partial coefficients:

0.391	aesthetic sensitivity to musical ability, with intelligence and socioeconomic status held constant. The *r* was significant at the .01 level.
0.075	aesthetic sensitivity to intelligence, with musical ability and socioeconomic status held constant.
0.022	aesthetic sensitivty to socioeconomic status, with musical ability and intelligence held constant.

From these coefficients Parker concluded that there is a moderate relationship between aesthetic sensitivity and musical ability, only a slight relationship between aesthetic sensitivity and intelligence, and an insignificant relationship between aesthetic sensitivty and socioeconomic status. While the researcher spelled out in detail most of his statistical procedures, he passed over with only a two-sentence comment the matter of significance and statistical error as applied to the study. Although the results of the study would not have been altered to any degree, the additional information would have allowed for a more complete understanding of the data.

The usefulness of the research rests largely on the validity of the individual tests used to provide the data for the statistical analysis. If the tests do not do adequately what they purport to do, especially the test for aesthetic sensitivity, then no amount of statistical treatment will make the research worthwhile.

*Order number 61-5028, microfilm $2.75, xerox $7.80.

Part of the problem in considering aesthetic sensitivity is a vagueness and lack of common understanding as to what it is. Even the researcher had trouble stating the concept with precision. For one section of the study the terms "music appreciation" and "aesthetic sensitivity" were considered to be synonymous. At an earlier place in the study Parker presented the following definition:

> By aesthetic sensitivity in relation to the perception of music is meant the individual's discerning responses made to music, such responses being considered by consensus of musical sophisticates to be appropriate to the aesthetic values invested in art music by our society (Western Civilization). As the opportunity arises, the quickness and thoroughness with which the individual becomes aware of these values and accepts them as a part of his value system are symptomatic of his capacity for aesthetic responsiveness.

The statement tends to point to two somewhat divergent conclusions. One says that aesthetic sensitivity is "discerning responses." The other points to an awareness and acceptance of values as symptoms of responsiveness, a position that is open to challenge. If aesthetic sensitivity is acceptance of values based on opportunity, then it would appear to be a sociological phenomenon, a product of acculturation. If it is an innate responsiveness of a special type, then how do these responses differ from those called for in the musical ability test?

Wing, in his test, did not claim to be testing aesthetic sensitivity, but rather appreciation. His Tests of Appreciation are openly associated with training. One of the four tests has the testees choose the better pattern of accentuation from two playings. A second test has them choose the better of two harmonizations, while the third consists of selecting the better of two levels of loudness, and the fourth test follows the same procedure regarding phrasing. Wing established validity by the fact that testees scoring low on the Tests of Appreciation were far more likely to have given up studying music than those who scored high. Because there was a positive correlation between the test score and the amount of music study, it can be argued that Wing's tests are ones of aural familiarity or achievement. Wing's findings can also be interpreted in other ways. It could be maintained that the results merely prove that the high ability students stayed with music study and that, therefore, such results could have been anticipated. Another position could be taken from Wing's evidence: the ability and appreciation parts tend to measure the same things. Parker's research adds credence to this conclusion. However, unless aesthetic sensitivity is a misnomer for a product of culture that is dependent on training, then Wing's tests are an inappropriate choice for its measurement.

Even though a possible association between aesthetic sensitivity and acculturation was indicated, Parker did not follow through on this point by considering the information gathered on the musical participation of the students tested. For some reason no analysis was made of this information.

Another question comes to mind regarding aesthetic sensitivity. Is not sensitivity to the aesthetic in music related to or the same as sensitivity to the aesthetic in the other arts? Seemingly, if a person had a highly innate or developed aesthetic sensitivity (it does not matter here which position is taken), then this capability would be operative when one looks at a painting as well as when one listens to music. The researcher did not investigate this matter.

As Parker concluded in one section of his study, "The estimate of aesthetic sensitivity, its incidence and development, continues to challenge the researcher because of its impalpability." The word "challenge" would better be changed to "elude."

A valid statistical analysis of socio-economic status is limited to some extent by its association with the concept of stratification as currently used in sociology. The most widely accepted work on socio-economic status in the United States was done by Warner in connection with studies of stratification. The portion of his work most frequently used is "The Occupational Rating Scale." It provides, sociologists believe, a good means of rough classification, although admittedly social attitudes, educational aspirations, and value systems, including the value placed on the arts, may vary within a given socio-economic classification. One wonders if the data supplied by rough measures such as Warner's occupational scale are suitable for refined statistical analyses.

The concept of socio-economic status was used in an effective manner in Parker's study. He did not make clear, however, the distinction between social stratification and socio-economic status. The impression could easily be gained from reading the study that the two terms are synonymous, when in fact stratification is a more comprehensive sociological concept.

Parker faced a special sociological limitation in that his study was confined to Kansas. As he points out, Kansas is not particularly representative of the United States with regard to social stratification.

The researcher demonstrates competence in research technique. The data secured reveal low levels of relationship between factors that many people have assumed to be somewhat related. In considering the data, however, one must keep in mind that the study is dependent upon the clarity of concepts and the validity of tests that are themselves open to question.

Footnotes

1. In the opinion of the editor, the tests are incorrectly named in the dissertation. The tests are Standardized Tests of Musical Intelligence. A British Journal of Psychology monograph supplement was published in 1948 with the title of Tests of Musical Ability and Appreciation and refers to the musical intelligence tests. The error has been allowed to stand in order that the review correspond with the dissertation.

A STUDY OF THE RELATIONSHIP BETWEEN MUSIC APTITUDE AND ACADEMIC ACHIEVEMENT OF GRADUATE MUSIC STUDENTS* Indiana University, 1963

Floyd H. Peterson

Reviewed by Robert F. Noble

Following indication of the trend toward music aptitude assessment for graduate students to provide prognostic and diagnostic information about individual students, Peterson gave as his specific problem a determination of the relationship of music aptitude test scores and academic achievement. For this, he used a correlation study of five factors of the master's degree program (major field of musical study, major medium of performance, theory, examination status, and graduation success) compared with results of the _University of Indiana Test Battery_, (which includes subtests for _Pitch_, _Rhythm_, and _Tonal Memory_ of _Series B_, _Seashore Measures of Musical Talent_; the _Drake Musical Aptitude Test_, subtest for _Musical Memory_; and the _Madison Test of Interval Discrimination_). He used as a sample 259 graduate students from the University of Indiana on whom sufficient data were available.

Peterson completely and fairly analyzed the well-known controversy between Carl Seashore's theory of specifics and James Mursell's omnibus theory as to the nature of musical talent and its possible measurement. He concluded this background information with the oft-expressed thought that: "It is regrettable that Mursell has not developed a measure of musicality founded on the principles inherent in his views of the nature of musicality."

Much of the study was given over to tabular presentations of two-way correlation analyses of the five factors and the various parts of the Indiana test battery. The Pearson r, t tests of significance of difference between means at .01 and .05 levels, and analysis of variance were used in the analyses. Interestingly, Peterson applied an "index of forecasting efficiency" (of some value in predicting validity of any criterion measure) which gives the reduction in errors of prediction which may be expected from the use of a given correlation coefficient. Throughout, Peterson found low and moderately low coefficients of correlation.

Among his conclusions, the follow, paraphrased by the reviewer, seemed the most vital:

1. Subtests concerned with actual musical stimuli in presentation produced the generally highest relationships.
2. With all the test battery, coefficients for music history and literature grades were the lowest and least significant.
3. While the present battery (the Indiana test battery) will result in a slight improvement over chance selection, its use as a final arbiter is unwarranted.
4. Only negligible differences appeared between types of majors with regard to mean error scores on the musical aptitude battery and the criteria average.

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*Order number 63-7148, film $3.60, xerox $12.60.

Study of the Relationship Between Music Aptitude and Academic Achievement

CRITIQUE

It is refreshing to read a statistically oriented study in music. As a group, musicians seem to distrust facts and figures, perhaps under the feeling that music is an Art and, as such, does not lend itself to quantification. The statistics used were pertinent, logical, and sufficiently sophisticated to be of real value. Some aspects, however, of the study might be questioned:

1. Peterson listed a basic assumption that the sample was normally distributed. This is always highly dangerous in research, particularly with the small N's he used.
2. He assumed that music education majors have the least knowledge and skill among the major fields in music. (Many of our finest college music faculty firmly believe that a majority of academically talented and musically talented students take a performance degree in music and that the weaker students, academically and musically, go into music education). Conclusion 4, preceding, tends to negate this assumption.
3. One wonders, in place of the 165 tables of primarily two-way correlations, why he did not use one multiple-correlation matrix.
4. Because of the small N's and the specific tests used (the Madison test is not as well-known as the other two) the results of the study may be limited in generalizability to the finite population of Indiana University.

Whether or not these criticisms are valid, the study remains a piece of significant research in the field of music education. An especial strength was the objectivity with which Peterson wrote the thesis; a number of times he challenged his own assumptions, sources of information, and design. He avoided the common tendency of many graduate students in attempting to make more out of existing evidence than is actually there. In light of evidence derived in the field of music testing since he wrote the study in 1963, he probably would have done some things differently had he written it in 1968.

Petzold, Robert. The Perception of Music Symbols in Music Reading by Normal Children and by Children Gifted Musically.

Reviewed by Frederick Swanson

Teachers of vocal music are perennially reminded of their failure to develop facile sight readers in their classes. That their singers cannot read the score at sight is frequently pointed out to them, if they are not already aware of the fact.

Dr. Petzold's study "The Perception of Music Symbols in Music Reading by Normal Children and by Children Gifted Musically" is one of a few dealing with the problem of sight reading. The study is divided into two phases. The purposes of Phase I of the study were: (1) to examine perception as the visual and aural identification and recognition of the similarities and differences between tonal configurations by children in fourth, fifth and sixth grades; (2) to study the techniques appropriate for the collection and analysis of the data; and (3) establish, in part, the basis for selecting learning tasks for Phase II. (Phase II consisted of giving the 138 average and gifted 4th and 6th grade children eight trials in which to learn five tonal configurations and a similar number of trials to learn a song using the same configurations). That it deals with a very restricted area of note reading is apparent. That its conclusions are correspondingly limited in application is also obvious. But as a project which opens up provocative avenues of exploration and which describes techniques usable in further studies, it is highly significant and worthy of reference for further researchers.

Children gifted musically are defined in this study by a teacher rating form prepared by Petzold and by results of the Kwalwasser Music Talent Test, Form B. Correlation between these two measures was low: School A, $r = .34$; School B, $r = .39$ and School C, $r = .34$. Petzold decided that the gifted would be those who ranked highest on both measures.

Now whether reading by the tonal pattern method is the best way to develop sight reading is by no means certain; the technique of building a strong concept of pitch via solfege or the numbered-scale-interval system has enough devotees to justify doubt. Just as the teachers of English reading are still uncertain about the whole word, phonic, or complete sentence method, reading of music by tonal patterns, complete phrase or individual pitch intervals would still seem to be an unresolved choice.

Moreover, the limitations of learning and identifying certain configurations in one or two short sessions (15 minutes each) as was the case in Dr. Petzold's situation raises doubts. There is reason to believe that to become aware of tonal patterns one needs many experiences and maturation over a long period of time to yield dependable results.

With these reservations in mind, the study produces some provocative results. From Dr. Petzold's list, I suggest these as important for consideration:

1. No significant difference was found between boys and girls, although teachers tended to label girls as superior in music reading.
2. No significant difference was found between 4th, 5th and 6th grade children when the scores used for comparison reflected the subject's knowledge about musical notation. When fourth and sixth grade students were compared on the basis of the speed at which they learned the tasks, the sixth graders were superior.
3. The musically gifted subjects consistently did better than their "average" classmates at all three grade levels.
4. No significant difference in ability to read music was found between subjects with one or more years of instrumental training and subjects with no such training.
5. Prior practice in learning songs had no significant influence on learning tonal configurations, while prior practice in learning the configuration proved a help in learning the related songs.
6. Several conclusions combine to indicate that all groups were inconsistent in their performances from one task to another; that they had difficulty in identifying patterns within the content of a song; and that they did much guessing wherein they perceived and responded to the outward shape of a configuration but lacked the ability to identify more subtle changes.

Because all testing was on an individual basis, the number of subjects had to be kept small. Using acceptable sampling procedures, 89 students from grades 4, 5 and 6 were used in Phase I; 138 students from grades 4 and 6 were used in Phase II.

In Phase I, the subjects were given three trials in which to attempt to learn a set of ten different tonal configurations. In Phase II, the subjects were given eight trials in which to learn five tonal patterns and a similar number of trials in which to learn a song using the same patterns. For Phase II these two tasks were presented on different days.

The method of choosing the tonal configurations was thorough, with resulting data that should prove important as source material for future research in this area. Three hundred and twenty-six songs from music texts were analyzed and 558 different configurations were identified, with a tonal frequency count of 4575. The twenty-two most frequently occurring configurations were listed, supplemented by the next 25. From these most commonly appearing patterns, those to be used in this research were selected. If it is true that certain tonal patterns, like certain words and phrases in written English, appear most frequently in printed song-scores, this aspect of Dr. Petzold's study will be a valuable source of reference. Future researchers should be cautioned that neither the frequency nor the order of tonal patterns in present-day song books is a valid criterion as to what would be the best learning sequence, as the books themselves were written without attention to this factor. However, Petzold's methods are valid when considering how the material in our present song books should be learned.

Three serious shortcomings in this study are apparent, not because of faulty technique but inherent in the nature of the study.

1. The environment was artificial. Subjects were taken out of their customary classroom environment and were asked to respond to a relatively unfamiliar examiner. Some subjects had to be by-passed because they were "too nervous" to respond well. Had this study been conducted in an actual, familiar classroom situation (or a setting closely approximating) the responses might have been different.
2. The time allotted for each subject had to be strictly limited. Had the pace been more leisurely, the procedure less hurried, results may have been different.
3. The motivation was naturally weak and artificial. Children may cooperate with an outsider in an imposed experiment or project up to a point, as a matter of courtesy or curiosity. But the learning of (to them) artificial configurations quite unrelated to their usual classroom activities and leading to no apparent reward (e.g., a report card grade, advancement in musical career, preparation for inclusion in some chorus or even winning a prize for being the best) may not have inspired these subjects to their best or even their ordinary efforts.

These weaknesses are not insurmountable. Several well-trained teachers working in an ordinary classroom situation might easily adapt the procedures used in this study and their results might resolve the doubts raised by the limitations of this first project.

The strengths of Dr. Petzold's study outweigh these minor weaknesses. One of the greatest values of the project is the vast number of challenging problems it suggests for future research. Equally valuable is the very practical item that it describes workable, defensible methods of procedure. Some of the problems this works suggests to the reviewer are these:

1. The place of music reading in a required curriculum.
    A. Is ability to read music worth developing in all of our students? If few of our students will become performers (at even a modest level) needing this skill, and if the musically gifted are demonstrably superior in their rate of acquiring said skill, should we minimize the amount of training in score reading in required music classes?
    B. Might there be a best time to emphasize score reading? Could it be that our music teaching would achieve better results if planned training in score reading were deferred until grade 6, and engaged in intensively; or might it be best to postpone planned sight reading activities until ability-grouping becomes possible (as in many junior high school situations) and students can be grouped into classes on the basis of mental age, or grade level in reading of English or by musical talent and interest or continued as it is at present?

2. In the light of our inclusion of music in the curriculum for every child, is there a best or a preferred method for teaching note-reading?
    A. Is the best method the tonal pattern method? Or the use of solfege (or interval numbers) to measure pitch intervals? Or is there merit in using the similar phrase approach to note reading?

NOTE: There is a wealth of research in the field of English reading as various approaches such as whole-word method, sentence method, and phonics are used to develop reading skills.

    B. Dr. Petzold points out the factors of variation in key signature, rhythm patterns and clefs that complicate identification of tonal configurations. Here is a field for investigation, fertile and extensive. For example, should a single configuration be used in many keys and rhythm patterns before the next one appears, or should a vocabulary of configurations be learned and then used in many combinations and permutations of rhythms and keys?

3. The importance of motivation. There is an old "saw" that it is not the technique but the desire that is important. Instrumental directors frequently affirm that because of contests they can inspire their students to acquire a level of playing proficiency obtainable no other way. From these observations plus some implications made by Dr. Petzold evolves the question "How much more readily are score reading skills acquired as students feel a need to achieve a related goal, e.g., membership in a prestigious choral group or a grade on a report card, as opposed merely to doing assigned tasks in a classroom situation?" The place of student identification with need for ability to read the score opens up some provocative projects for research.

Obviously any one of these three areas alone is so vast that a research project to encompass one fully would be possible only with large resources of time, staff and money. But within each of the areas there are many small scaled and more modestly defined subprojects. And there are other areas, important and expansive. Graduate students seeking a problem suitable for research can find many small scaled projects suitable for a master's dissertation suggested here; an organized team of researchers can find here areas of investigation broad enough in scope to extend over many years.

The results of this study tend to support the point-of-view that a higher level of music reading competence depends upon providing children with activities which will enable them to understand and use the concepts underlying musical notation. They need a working knowledge of the "tools" of musical notation, but will be unable to use these tools effectively unless greater emphasis is given to those activities which give the child an opportunity for independent performance, both group and individual. Such independent performance implies that the teacher should not always feel compelled to assist the class with her voice or with some type of instrumental accompaniment. Children in this study demonstrated that they did not read music successfully unless they thought about the notation and about the reading process. There is no incentive or need to think unless the reading activity is interesting, challenging, and relevant to other kinds of musical activities taking place within the school program.

Taken as its own absolute value, "The Perception of Music Symbols" is the description of a thorough if somewhat restricted research project. But one wonders how many graduate students in music education, in how many universities, will thumb through this report, using it as a sourcebook and guide over the next quarter century. Therein lies the greatest contribution Dr. Petzold has made to the cause of research in music education.

Pflederer, Marilyn. The Responses of Children to Musical Tasks Embodying Piaget's Principle of Conservation. University of Illinois, 1963.

Reviewed by Robert G. Petzold

Introduction

Music educators agree that one of the major objectives of the music program in the elementary school is to develop the broad musical understanding and musical responsiveness of each individual child. This objective is implemented through a variety of meaningful musical experiences planned so as to permit the development of those fundamental musical concepts that are essential to musical understanding. Professional music education literature, which is based largely on personal opinion and experience, provides considerable information regarding the nature and content of such musical experiences but fails to identify specific musical concepts or to discuss the nature of concept formation. A limited number of research studies have been concerned with this problem of the formation of musical concepts but "the findings have not been interpreted in light of any recognized psychological theory of learning." Therefore, we find ourselves carrying forward extensive music programs at the elementary school level without having established a satisfactory psychological basis for our existing practices. Miss Pflederer's cautiously planned and interesting study is a significant first step in providing such need information.

The Problem

The author of the study became interested in the work of Piaget and raised the basic question that "if a child's musical learning is inseparable from other learnings and follows the same general patterns of development, would it then not be possible to apply Piaget's theory to musical growth and development?" Recognizing the breadth of the question, the author decided to conduct a pilot study to be concerned with but one aspect of Piaget's theory of mental development. . . . "to devise musical tasks embodying the Piagetian principle of conservation" with respect to meter, tone, and rhythm. These tasks, administered to five- and eight-year-old children, sought data which might identify developmental trends in the "conservation" of the specific musical concept represented by the task. In keeping with the observational techniques utilized by Piaget, the author selected only eight children at each of these age levels and worked intensively with each individual child.

The reader is provided with an excellent summary of Piaget's theory of intellectual growth and development and it would be appropriate to begin with this statement from page 38 of the Pflederer study:

> Concept formation depends upon two primary factors--the acquisition of the symbol function and the elaboration of the mental operations by which concepts are formed. Since a concept involves a sign or symbol by means of which it is conveyed, language development plays an important role in the formation of concepts. Also of primary importance. . . .is the process by which the conept is formed. It is this process which Piaget sees as an

> elaboration of mental operations originating in the child's own activity. He traces this elaboration of thought process from its substructure of sensori-motor intelligence through the preconceptual and intuitive phases of preoperational thought to operational or reflective thought.

Piaget, by giving major attention to the ways in which children utilized their experiences, was able to identify four major stages in the development of behavioral and thought processes from infancy to adolescence: (1) the sensori-motor stage, first 18 months; (2) the preoperational stage, 18 months to 7-8 years; (3) the concrete operational stage, 8 years to 12-15 years; and (4) stage of formal operational thought. Transitions between these stages are, of course, continuous and gradual and the stages themselves represent a constant progression from the simple reactions of the infant to the complex actions of the adult. The Pflederer study pays particular attention to the two middle stages.

The preoperational stage begins with the development of the symbol function through symbolic play and imitation and leads to the acquisition of language, a skill that is essential to conceptual thought. Midway through this stage the child reaches what Piaget calls the intuitive phase in thought. Here we find that the child's perception of the dominant elements of the perceptual field, referred to as "centration" by Piaget, causes him to ignore other elements present in the situation. He gradually learns to focus attention on other elements and at about age seven operational thought "emerges when the concepts formed at the preoperational level are organized or grouped into coherent systems." Piaget holds that the principle of conservation is essential for the appearance of the operational system of thought because "only as a given material remains permanent and independent of changes in its form can the mind use it in building a conceptual framework of the physical world." After age seven the child "reasons with necessary conservation and so is able to conserve quantities and numbers, to classify, to serialize, and to construct conepts of space and time which are typical of adults."

The author's study is concerned with the rational aspects of musical development and, since conservation is a key concept underlying Piaget's theory, this notion is extended to musical thought. The tasks devised by Piaget to provide for perceptual contact between subject and object were visual and tactual. It appeared completely logical to the investigator that perceptual contact might just as well be aural. To disagree with this rationale would be to cast doubt not only upon the validity of the present study, but also upon a commonly accepted analysis of musical learning and generally accepted explanation of musical development.

Procedures

On the basis of preliminary experimentation with three eight-year-old boys, the author devised nine musical tasks with six of these finally chosen for use in the study. The musical content of the tasks were tape recorded, as were the child's verbal and musical responses in the testing sessions. Eight kindergarten and eight third-grade children were selected by the classroom teachers who observed only the criterion that the child should have had no private music instruction. Each child met individually with the investigator for four fifteen-minute sessions. The task was introduced by means of a story, followed by a brief practice session to clarify the element being considered, and subsequently by the task itself. It should be pointed out that each task was "designed not so much to determine the child's immediate aural perception as it was to discover how the child thinks about what he is hearing." Consequently, the testing sessions were quite flexible; examples could be repeated, questions asked by the investigator varied from child to child as the situation warranted, practice sessions could be repeated, and the number of responses permitted children on any given task varied from individual to individual.

The author's musical tasks were designed "to trace the stages of conservation in musical thought." Each of the tasks required a foil, "a change made in the shape or presentation of a specific property to test the child's ability to conserve it. Conservation of a given empirical property results when that property remains invariant in the child's mind even though changes occur in its form or in the total stimulus field of which the property is a part." The six tasks used in the study may be briefly summarized as follows:

Task IA (Conservation of Meter)

Six four-measure examples in either duple or triple meter were played on a drum. The distribution of note values within each measure was varied from measure to measure, each example becoming progressively more difficult. The child's attention had been called to the function of the accented first beat and he was then to identify whether the example was in duple or triple meter. Could he conserve the idea of meter when hearing notes of variable duration?

Task IB (Conservation of Meter)

The child heard two short piano pieces and was to identify whether the piece was duple or triple meter. The response depended upon learning which took place in Task IA and the child was not confronted with a totality of meter, harmony, melody, and rhythmic pattern or duration.

Task IIIA and IIIB (Conservation of Rhythmic Pattern)

Four patterns were used in IIIA, each pattern played on a single tone bell and presented four times in succession. The child "learned" the pattern during a brief practice session and was to identify the incorrect presentations of the pattern. No foil was used in IIIA since the task was apparently considered as a prerequisite learning session to IIIB. In IIIB, each of the four presentations of the four patterns was varied tonally. The child was to identify that presentation which was rhythmically different from the model, ignoring the variant of tonal difference. The child did Example No. 1, Task IIIA and then Example No. 1, Task IIIB before going on to the next pattern.

Task IV (Conservation of Melody)

A four-measure phrase, played twice with the tune augmented on the repetition, was presented to the child. The child was to show awareness of this temporal difference but was expected to identify the melody as being the same despite the doubling of duration.

Task VI (Conservation of Tonal Pattern)

Four three-note tonal patterns were used, each presented four times in succession with each presentation in a different tonality. The child was to identify that presentation of the pattern which was incorrect even though the contour was retained. This was not true, however, of Example #3 where the incorrect presentation was an inversion of the model.

Task VII (Conservation of Tonal Pattern)

Three tonal patterns, two five-note and one six-note, were "learned" by the child. Each was then presented four times with each presentation varied rhythmically but not tonally except for the tonally incorrect presentation which the child was to identify. Will the tonal pattern remain invariant when embodied in various rhythmic patterns?

Task VIII (Conservation of Melody)

Four settings of a sixteen-measure melody were used, with harmonic and rhythmic variations introduced in the various accompaniments. The melody itself was changed in one of the settings and the child was to identify the incorrect melody.

Findings and Implications

Chapter V of the author's study contains a detailed discussion of each of the sixteen cases participating in the project. A summary of the child's verbal and musical responses to each of the tasks is presented and this serves as a basis for a summary statement such as, "A5 appears to be at the preoperational level on all tasks." Throughout this chapter the author not only presents data but interprets that data as well. This section of the report also provides the reader with a valuable insight into the procedures of the study, thus making it possible to replicate the work. Chapter VI summarizes the responses to the various tasks by age groups, pointing out essential similarities and differences between kindergarten and third grade children. The author, on page 195, summarizes the findings as follows:

> "The eight-year-old children were better able to conserve meter in Task IA and B and the tonal and rhythmic patterns of Tasks IIIA and B, IV, VI, and VII than were the five-year-olds. Only Task VIII failed to show a differentiation between the two groups. Task IA and Task IV indicated differences in the kind of explenations given by the five- and eight-year-old children. The intuitive answers of

> the kindergarten children showed a lack of conservation and were indicative of preoperational thought. The answers of the eight-year-old children reflected the intermediate stage of conservation. Adumbrations of operational thought were indicated by answers of two children, A8 and C8 to Task IA, and by C8 and H8 to Task IV. Tasks IA and B and IV, dealing with durational values, seemed to present a better opportunity for operational thinking than did the tasks involving the conservation of tonal patterns."

The major implications of this pilot study for music education are consistent with current practices in elementary school music, as pointed out by the author, and so will be mentioned only briefly.

1. "Children should be encouraged to respond physically to the rhythm of the music through moving to the music and playing rhythm instruments."

2. There is a need to establish models for the children to imitate, with these models matched to the child's level of development.

3. "Because the children's musical growth develops in stages, the musical experiences provided by the curriculum should stimulate a maximum amount of growth at each stage....the necessity for supplying a variety of musical experiences to exercise existing schemata."

4. There is a need for guided listening in the classroom, ask the child to listen for a specific thing and frequently change the focal point of his aural perception.

5. "Experience with a large repertoire of these (tonal and rhythmic) patterns of themes in many and varied guises is necessary to sharpen the child's ability to discriminate between patterns and to follow thematic development of the patterns."

6. In terms of part-singing, by "learning to shift the focus of his perception to the different voice parts, a student will be better able to hear the relationships among the parts and the relationships of the parts to the whole."

7. We need to help children develop and use a musical vocabulary.

The author concludes the report with a number of suggestions, given under the heading of "Suggestions for Further Research", regarding the improvement of the pilot study in terms of revised tasks and procedures. This is undeniably one of the major values of any pilot study.

Comments

Miss Pflederer is to be commended for selecting a doctoral topic which can readily serve as a basis for future research activity. Musical learning, particularily with reference to the evolution and development of musical concepts, is a problem area worthy of considerable long-range and systematic investigation. The major functions of a pilot study are to explore and refine research techniques and procedures and to test a limited number of hypotheses in order to formulate new hupotheses. The author clearly describes this as a pilot study and, as such, it accomplishes certain of the purposes which were outlined. Certain weaknesses which the author identifies in the final chapter might well have been avoided had more time and thought been given to the preliminary experimentation. The tasks and testing procedures used in the study were developed on the basis of preliminary experimentation with *three* eight-year-old boys. Since the study planned to involve kindergarten children and girls from both age groups it would have been appropriate to have used additional cases in the preliminary exploration. It is also possible that further exploratory work might have led to greater simplification of the tasks and to limitations as to the number of tasks to be used, length of testing sessions, types of questions to be asked, etc.

Consequently, one is justified in asking whether the "stories" that were used to introduce the tasks to the children were understandable and meaningful to all of the children in both age groups. Did the vocabulary which was used to identify and clarify the musical problem under consideration really serve this purpose? It is quite possible that the children who were unable to "conserve" the musical element present in the tasks had not understood the nature of the task. The author recognizes this possibility but should have structured the "stories" more carefully in order to minimize the problem.

The author's musical taskswere designed to study the conservation of a given musical element as that element was presented in a changed setting. Each of the tasks was "presented in a setting representing a learning situation." However, since the tasks are considerably more complex than the author intended them to be, one must question the rather limited interpretation of the data which had been gathered--limited in the sense that the child was either able to conserve or unable to conserve. For example, Task IA was designed to "assess the ability of children to conserve meter," the length of the measure was either of duple or triple meter and the distribution of note values within the measure was varied. The child was to tell whether the item he heard was in two or three, with the opportunity of listening to the stimulus more than once if necessary. The "story" which introduced the task contains a careful analysis of the components of this particular musical concept and, if the child *knows* the components he then understands the concept of meter. In the "story" the child is first exposed to the idea of *accented* and *unaccented* sounds; then to the idea of spacing these sounds or accents in groups of two or three; and finally to the *division* of beats into shorter notes. Since the task requires an understanding of all these ideas, it is quite possible that failure on the part of the child to grasp any one of them would make it impossible for him to "conserve meter," a possibility which is apparently not taken into account by the author. This also applies to the other tasks used in the study, particularly with respect to the kinds of learning which take place during the orientation period.

There are times when the author does not seem to be studying the conservation of a given property, as a principle set forth by Piaget, but is interpreting the data in terms of "retention" of a learned stimulus.

The procedures and tasks need to be carefully reexamined to insure that they are in keeping with Piaget's theories, if this is the operational purpose of the study. In the case of tonal or rhythmic patterns, to what extent did the investigator concern herself with the actual learning of the patterns which were subsequently modified? The extensive discussion of each child's performance focused attention on what the child said he heard, how he answered the key questions, and what responses he made to repetitions of the item. This analysis led to the statement that the child was either "able to conserve" or "unable to conserve" the item under consideration and the child was then placed at either the preoperational or concrete operational level on the several tasks. Implicit in certain of these tasks is the idea that "to conserve" is to remember the original item from the practice session and recognize it in a new situation. It would seem highly significant, therefore, that any judgments made regarding a child's capacity to conserve must take into account not only the learning which took place during the practice sessions, but also in the case of the third-grade children, recognize the influence of previous musical learnings.

The six tasks used in this study were presented to each child during four fifteen-minute sessions. Since there were sixteen children involved in the study, this represents a minimum of sixteen hours spent in collecting data--a modest amount of time considering the nature of the hypotheses. The author seems satisfied that these four sessions provided sufficient time to explain the task, teach the material which was to be "learned," and to administer the task. However, because of the complex nature of many of the tasks it would have been of considerable value had the investigator devoted more time to the collection of data. This is particularly important because the study involved a limited number of cases. The study would have been significantly strengthened had the tasks themselves been divided into several sub-tasks, each sub-task clearly limited to a single variable. The mass of data made it difficult to "sort out" all of the variables that were present in each of the tasks, thus precluding a careful analysis of the musical problem which was being considered.

It is to be hoped that Miss Pflederer will be sufficiently interested in this problem area to undertake the necessary evaluation and reexamination of the pilot study in order to plan for future research activities. The tendency to explore a wide range of concepts within the framework of a single study must, if the findings are to be significant, be controlled so as to permit exploration in depth. The procedures, with the exceptions pointed out by both the author and by this reviewer, are reasonably satisfactory. The ingenious tasks devised by the author should be of considerable interest to others planning to do research in this area and readily serve as models for a wide variety of similar tasks concerned with musical concepts.

Purrington, Bruce Rollo. The Instructional Materials Center as it Functions in the Music Education of Children.* Teachers College, Columbia University, 1963.

Reviewed by Gaylord H. Farwell

Introduction. Through a survey of the literature and reference to research, the author established a need for his study. The project report was designed to promote a knowledge and understanding of the instructional materials center and its function in the music education program. The instructional materials center is envisioned as an expanded library program serving students and teachers with studies and activities built around printed, graphic, projected, transmitted, and community materials and resources.

Purpose. The author states, "This report aims at giving music educators and instructional materials directors an idea as to how materials might be employed for a program of quality music education." Although it was not stated as a purpose, the writer also had the objective of providing the reader with a proposed classification system for cataloging musical materials and furnishing a rather extensive selected, annotated bibliography of music educational materials.

Report. The author briefly traces the historical development of school libraries and their functions up to the present day and their evolution into the current concept of the instructional materials center. A classification system for musical materials within the Dewey Decimal System is presented. The author makes an analysis of selected materials and shows how these materials could be used in an instructional program. These materials were placed in five categories as follows:

1. Printed musical materials: the printed musical score, books about music, books related to music, pamphlets, newspapers, and serials.
2. Graphic musical materials: charts, pictures, musical games, posters, and diagrams.
3. Projected musical materials: films, filmstrips, and slides on musical subjects.
4. Transmitted musical materials: disc recordings, tape recordings, radio and television.
5. Community musical resources: public and private institutions, professional musicians, lay people, collections, and community musical events.

The next section of the report identifies the personnel associated with a music education program utilizing the resources of the materials center. The personnel identified were the administrator, director of the center, teachers, and students. The role concepts assigned to the personnel were those of supporting, building, evaluating, teaching, and coordinating.

Finally, the author includes in six appendices a 77-page classified bibliography of instructional materials recommended for use in elementary and junior high school music classes. The six appendices bear the following headings:

*Order number 64-5688, microfilm $4.20, xerox $14.85.

Bibliography of Printed Musical Materials
Bibliography of Graphic Musical Materials
Bibliography of Projected Musical Materials
Bibliography of Transmitted Musical Materials
Bibliography of Catalogs and Books Listing Musical Materials
Bibliography of Professional Musical Materials

The classification system uses the following key:

A Recommended in the booklist of the American Library Association, or in the ALA Basic Lists for elementary, junior high school, and high school

B Approved titles as listed in Best Books for Children, including adult books for young people

C Recommended in the Children's Catalog; C*--especially recommended; C**--most highly recommended

L Recommended in the "Junior Libraries" reviews of the Library Journal; L*--especially recommended; L**--most highly recommended

M Recommended in the Journal of Research in Music Education, an issue entitled "Music Education Materials: A Selected Bibliography"

N Recommended in the booklists of the National Council of Teachers of English entitled Adventuring with Books and Your Reading

Comments. In the judgment of this reviewer, the author has made a useful contribution for elementary and junior high school music teachers and directors of materials centers who are concerned with classification and storage of music education materials. The classroom teacher responsible for instruction in music within the self-contained classroom could find many ideas in this study. The combined staff could find many valuable suggestions for stocking the materials center with recommended materials.

The study serves to bring up to date (1962) a listing of many materials contained in Volume VII, Number 1, Journal of Research in Music Education, "Music Education Materials." The report of this project is a practical tool devised by an individual with a background in both library work and music education. The report not only presents a listing of materials but makes an evaluative judgment about them and provides helpful suggestions for their use in an instructional program.

This reviewer did not perceive this study to be a research paper per se, but rather as a sincere effort to provide a working tool for the practicing music educator. This report is such a working tool and the author, in this context, has made a contribution to his field.

Reimer, Bennett. The Common Dimensions of Aesthetic and Religious Experience. University of Illinois, 1961.

Reviewed by Max Kaplan

Congratulations are due Dr. Reimer for devoting his doctoral dissertation to a theme of significance and breadth, and similarly, to the department of music education at the Universtiy of Illinois for permitting a candidate this latitude. May this serve as a lesson to other departments and more timid candidates. For as the title of the dissertation notes, the author seeks no less than to establish the "common dimensions" of two types of experiences, the aesthetic and the religious. This statement (p. 277) may be taken as his major thesis:

> "In our theory, the purpose of aesthetic education is for more than the attempt to help youngsters enjoy the arts as an adornment to life. Rather, its purpose is the systematic conscious development of every person's comprehension of and sensitivity to greatness in art...the function of great art is to provide insights which may be called religious. The function of aesthetic education is to make these insights generally available. Hence--aesthetic education, when fulfilling its function, is essentially religious education." (P. 277)

This quotation indicates a desire by the author to go far beyond a theoretical comparison of the elements that constitute the aesthetic and the religious: they are literally interchangeable experiences; music, for example, can deliberately replace religious instruction in the school (see p. 23). (The reverse is not suggested.)

His argument is put early in the study: if we ask what the artistic and religious experiences are in function and meaning, we get similar answers. He employs two major conceptual devices to serve his analysis. First, he distinguishes between the "formalistic" and "referential" functions of art: the former emphasizes internal or inherent meaning, the latter relates art to experiences or ideas of the nonaesthetic order. Although other terms might be used, this distinction is a useful one, and indeed, has been utilized by an established scholar at the same university, D. W. Gottschalk, in his excellent Art and the Social Order. Reimer confines himself to the referential, or social functions, of art.

His second, and far more critical technique is to use a very broad concept of "religious," drawing upon Dewey, Langer, and Tillich. These writers represent "modern religious liberalism," with which the author frankly associates himself. "It is our opinion," writes Reimer, "that the religious beliefs of these great writers of this century are typical of contemporary religious thought, and that the orthodox viewpoint is steadily crumbling under the weight of advances in scientific, psychological and philosophical insights..." (p. 7). There is no need here to recapitulate their respective views. The following statement is a fair indication of the kind of view upon which Reimer rests his case (it happens to be Dewey, in this case):

> "Any experience can be informed with religious quality, which means that it can point to the underlying unity of man and world--of aspiration and ideal. And any experience can be touched with aesthetic quality, which means that it can embody for immediate apprehension the very same sense of unity of self and world."

For his evidence as to the validity and necessity of a broad response to music that is similar to the liberal religious response, he relies on Leonard B. Meyer, especially his 1956 volume Emotion and Meaning in Music. We need not here go into Meyer's categories of various types of musical meanings, since they contribute to Reimer's own use of Formal and Referential; the summary of Meyer's analyses is full, and explores the roots from psychology and information theory.

"Both experiences," the aesthetic and religious--concludes Reimer himself--"inform man in the deepest, most powerful way possible of the human condition of estrangement and the possibility of reunification." (P. 265)

To sum up my reactions to Reimer's interesting work, I find that (1) he starts out with a reasonable premise, but carries it to unnecessary excess; (2) he engages in what has been called the "self-fulfilling prophecy"; (3) he has succeeded in weakening the position of music education by providing an unnecessary rationale for it; (4) his sociology of religion is shaky; but he goes about doing what he sets out to do in a comprehensive way and has produced a well-written and stimulating work worthy of close attention in music education circles.

An attempt to isolate common elements between art and science, art and religion, science and religion, or any other sets of values, institutions or behavior clusters is entirely a reasonable task. Had Reimer done no more than this, his contribution would stand. Of course, relations between aesthetic and religious experiences have long been pointed out, by aestheticians, philosophers, social scientists, and cultural historians: R Mukerjee's The Social Function of Art, Arnold Hauser's The Social History of Art, and Otto Rank's Art and Artist are only a few that come to mind immediately. But to point to the common elements, such as functions, is not the same as proving that one context can be substituted for another context. If an analogy is in place, both family and the state are contexts in which a common element, power, can be found, yet this is far from asserting that family and state serve the same functions. When Reimer says he uses no analogy, for the functions are uniquely interchangeable, we must note that the real functions of neither the aesthetic nor the religious are expressible in words; he is comparing only symbolic expressions, and having consciously selected symbols to suit his argument, he becomes the victim of hiw own handiwork, accepting these words as the reality. It is the uniqueness of the aesthetic that provides its contribution, but it is a uniqueness not of words, even an imaginative and literary string of words, but of subjective experiences.

I have in several writings attempted to deal with the major ways of experience through the use of the alliterative trinity of "assumptive, analytic, and aesthetic." The assumptive, even for the liberals like Dewey and Tillich, is an ideology; it is an affirmation, a set of stated values of beliefs. It is, therefore, believed, affirmed, legendized, poetized, dramatized, embraced with enthusiasm, prayed to, immortalized in song, reaffirmed in salute. The *analytic* source of knowledge is by no means assumed only by the sciences, but it is best illustrated by them. It is a knowledge based on objectivity, evaluation, doubts, tests, experiments. Committed to such an approach, the observer cannot permit himself to admit, "This is what I like," but he lives out the questions, "Is it really so, what is it, why, how do we know?" The *aesthetic* experience or approach, in contrast to the others, is based on the essence of originality in putting together things, objects, ideas, sounds, forms, time and space relationships in ways that have not been done before, but on the principle of beauty. It is not that creativity alone deals in symbols, for the others do so as well; we symbolize all aspects of life, as in the prayer or the hospital's antiseptic look. But the assumptive lives by conserving, stabilizing, repeating, ceremonializing--and this is its strength, just as the strength of the analytic is a shock to those who cannot afford to have their notions challenged and pulled apart. The aesthetic attempts to view both stability and change in terms of a subjective norm, through the creator's own perception and experience as a trained, sensitive, courageous, individualistic, and confident person. Analysis and assumptions of many kinds enter into the aesthetic or creative process, but it has added a third element, subjectivity, whose essence by definition is that it cannot lend itself to generalization or objective verification; the nature of the aesthetic, as in art, is that *it is undeniable in any other terms of communication or meaning known to man*. That is its strength and reason for being.

Thus there are, of course, common elements that cut across this triune, but each stands on its own, and draws its rationale and strength from its inherent characteristics. On the other hand, it seems to me that Reimer has begun by saying in effect, I will pull out those descriptions from my selected source (Meyer) that music has deeply significant meanings--call them A, B, and C--and then pull out descriptions of religious experience from selected sources (Dewey, etc.)--call them Alpha, Beta, Gamma--and translate one language for the other. This is prophecy fulfilled by the nature of the instruments selected. For too long, it seems to me, music education has weakened its position by claiming that it provided the same functions as civics, athletics, and mathematics. From a strategic as well as a logical dimension, music or aesthetic education need not draw on social sciences, on analogies, or on the "referential" or "social" functions to make its case.

The sociologist in me is somewhat distressed to find that even if everything that Reimer tries to prove were so, he sets only a part of the case when he uses "functions" as the only criteria of commonality between the aesthetic and the religious. Fuctions do not become resolved in a vacuum. The functions of religion (true, more so in the orthodox traditions) are parts of institutional arrangements, as are aesthetic experiences. Social roles are parts of these social structures: ministers, violinists, Bibles, symphonic scores, sermons, the Union Theological Seminary, a cathedral, a mosque, Carneige Hall. All of these provide the elements within and through which the respective functions, no matter how comparable on the basis of word symbols, are perceived psychologically and experienced emotionally.

All this can be said candidly because Reimer has produced a serious and important work. Forcing the music profession to reexamine its basic purposes is no small undertaking. No music educator can read this work of almost 300 pages and fail to be impressed by a renewed confidence in his own functions. Comparisons of this work with ethics, logic, philosophy, religious or other varies of experience are valuable if not literally taken. Closer acquaintance with the writers noted above, including also an excellent summary of Jung's position, will benefit the music educator. Again, congratulations to Dr. Reimer for a thought-provoking work.

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It has been suggested that a few words might be in order here in explanation of the apparent contradictions between my position on several matters as represented by Mr. Kaplan in his review of my thesis, and as stated in my article in this issue on "Information Theory and the Analysis of Musical Meaning." The most obvious of these contradictions is the one concerning the Referentialism-Formalism debate, and the justifications for music education which would be offered on the basis of one's position in that debate. My thesis is based on the premise that

> ...the reconciliation of the two kinds of meaning (referential and formal) can only come, in our view, by beginning from Formalist assumptions. That is, the value of a work of art must be sought in the formal, syntactical elements of the work, and the reaction one has to it, to be called aesthetic, must be a reaction to just these formal, syntactical elements and not to any referents presented by the work's subject matter or suggested by one's own imagination.... A major purpose of this study is to show that the ultimate values to be gotten from aesthetic experience come from an affective reaction to the syntactical, formal elements of the art work, rather than to any representational or referential elements which might be present in the work or which might be invented by the imagination of the perceiver. Further, it will be argued that the experience of art in the formalist sense can indeed, if it is of high enough quality, carry us into the realm of human values, and at a point at which these values can only be discussed in metaphysical terms. (Pp. 12, 14)

This position has also been stated in my paper on Leonard Meyer's "Theory of Value and Greatness in Music," Journal of Research in Music Education, X, No. 2, (Fall 1962), in "Subject Matter and Meaning in Music," Illinois Music Educator, 24, No. 3 (March 1964). And in "What Music Cannot Do," Music Educators Journal, September-October, 1959. The point of my thesis, of course, is that only when music is taught as music--that is, purely aesthetically in the Formalist sense--can its greatest values as an art form be gained.

With the exception of these points, Mr. Kaplan's criticisms seem to me to be perceptive, and his words of praise most generous.

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Rhinehart, Charles B., Jr. Incidence and Causes of Withdrawal from Public School Music Teaching.* Florida State University, 1963.

Reviewed by Howard G. White

Recent years have seen an upsurge in the amount of academic effort and interest devoted to the investigation and study of the professional problems of the music educator. Dr. Rhinehart has attempted to explore one of the many dimensions of the problem--the incidence and nature of the circumstances contributing to the decisions of music educators to leave the teaching profession. This problem is of deep concern not only to the teachers in the field but also to those who recruit and train future music educators. The chief value of Dr. Rhinehart's study may prove to be the interest which it stimulates in forcing music educators to think about a significant professional problem. If this problem is deeply studied, it might enable the profession to reassess its influence and status in terms of the negative role obligations which those who leave experience.

As one surveys the available research on this problem in other occupations and among all levels and fields of education, he readily finds that it is not only among music educators that there is deep concern. The author fails to deal with the related literature available on other occupations and does not compare his findings with those therein reported. The extra effort expended to avoid parochial interests and comparing findings with other groups in the broader societal context might prove rewarding. The occupation of teaching music in the schools cannot be treated in an isolated context if the causes of withdrawal are to be adequately assessed. The study proposed three test hypotheses:

1. Drop-out frequency of school music teachers from their profession is sufficiently large to be a cause for concern, demanding remedial action.

2. Certain basic patterns of circumstances motivate school music teachers to withdraw.

3. Assuming that hypotheses one and two are proven correct, it is possible to devise remedial measures to improve the situation.

To obtain data, a questionnaire was developed, pretested, and then mailed to Florida State University School of Music graduates from 1950 through 1956 and all persons receiving doctoral degrees in music through 1960. From a sample of 377 possible respondents a return of 72.4 percent was received. The questionnaire requested the respondents to supply information of their personal history, employment history since graduation, attitudes concerning situations in music education, knowledge of other withdrawals, opinions as to causes of withdrawal, and suggestions for improving music education programs.

* Order number 63-4390, microfilm $2.75, xerox $6.00.

In testing the first hypothesis the writer concluded that withdrawal incidence was sufficient to be disturbing. Sixty percent of the men and 45 percent of the women now teaching music seriously considered leaving the profession; the respondents named 179 individuals who left the profession; and 72 percent of the men and 65 percent of the women respondents no longer teach music in the public schools. In testing the second hypothesis, Rhinehart concluded that over 70 percent of the respondents felt that inadequate salary, unsatisfactory space facilities, inadequate equipment, poor class scheduling, and an inadequate budget were the prime reasons for leaving the profession. Men most often cited the reason of inadequate salary and women stated that marriage and consequent family mobility were the largest causes for withdrawal.

The third hypothesis proposed proved untestable, but Dr. Rhinehart offered the following suggestions as remedial measures: raise salaries, improve space facilities, improve equipment, improve scheduling. In other words, improve all of those things that music teachers found distasteful. It was suggested that these measures might best be accomplished by the MENC, NEA, or the Civil Service, but the public and educational administrators might do it more quickly. This reviewer suggests that the reader personally assess the practicality of these proposed suggestions.

Comments

This study may be criticized in many ways! The areas that this reviewer will deal with are the experimental design, the lack of a conceptual or theoretical framework from which to interpret the findings, the type of sample studied, the hypotheses proposed for testing, the use of the questionnaire as a feasible instrument to collect data, and the depth and application of the conclusions reported. To this reviewer the study again demonstrates the great importance of constructing experimental designs with hypotheses which can be tested on the basis of data that are adequately collected.

Research designs which deal with occupational behavior, especially withdrawal, must consider the broader societal context in which the occupation is practiced. Structural-physical factors are important; however, a study dealing with sociological problems must also endeavor to explain the interactional behavior of an ego with his peers, the subculture, and the main features of the total society. This consideration may point to many questions. What values are placed on music or music education? What contribution does the role of a music educator contribute to societal aims and purposes? How is the music educator rewarded for successful role fulfillment, and how does he view the total situation in relation to alternative choices? The field of sociological theory offers some excellent theoretical frameworks on which findings of the nature reported may be interpreted. If no attempt is made to compare findings with other data, they remain as isolated, segmented facts which cannot be advisedly employed for descriptive or predictive purposes.

Rhinehart assumed that Florida State University music graduates would be:

> ...sympathetic to the objectives of a study emanating from their alma mater, and thus the prospect of a substantial response to an inquiry would be much brighte than a study embracing a foreign domain.

This statement might be sufficient grounds for a researcher to limit his sample, yet it is doubtful that graduates of other institutions would be hostile or that they would hesitate to respond to a well-designed, significant study. In limiting the sample to only one institution and geographical area, the conclusions reached must be necessarily applicable only to this limited group.

The three hypotheses that Rhinehart proposed to test are not explicitly stated, and the proofs therefore are vague. That dropout from music teaching is sufficient to cause alarm must be restated as alarm for whom and in relation or comparison to what other profession or group. As stated, the second hypothesis is not testable but requires a descriptive answer. Rather than having the respondents check those factors which they felt to cause withdrawal and then add the total number of responses for each factor, it might have been much more feasible to have the respondents rate the importance of each factor on an extended continuum; then the significance of each factor could be more adequately judged. In describing the complex process of decision making in changing professions it is doubtful if information collected by questionnaire would be adequately revealing. There can be little doubt that there are many personal and cultural motivations which are of different significance to most participants in an occupational group. To elicit adequate responses the employment of depth interviews might have proved more feasible.

There is little doubt that Rhinehart's conclusions that inadequate salaries and marriage and consequent mobility are important causes for withdrawal from music teaching. These conclusions could apply to most other occupations. Marriage and maternity have been the obvious reasons given by many observers for people withdrawing from an occupational role. Are there any "remedial measures" that could be employed to alleviate this problem?

The reviewer's research of this problem reveals that there are very few structural or role conflicts which are crucial to withdrawal. Instead, a person's self-image and his perception of alternative choices are largely dependent upon the cultural milieu in which he exists and the experiences that he has had in it. The choices and alternatives are weighed carefully, although they might not be perceived adequately. When better opportunities are available and one can be selected that is more self-fulfilling and personally satisfying, most music educators or members of any other occupation will readily make a change.

Dr. Rhinehart is to be commended for selecting a dissertation topic that is of vital interest to most people connected with music education and pointing out that a large number of people trained to be music educators withdraw from the occupation, at least at Florida State University. If research of this topic could be carried out among a larger group of universities across the nation, findings might be derived that would prove vital for the professional health and growth of the entire occupation.

Rogers, Vincent Robert. Children's Expressed Musical Preferences at Selected Grade Levels. Syracuse University, 1956

Reviewed by Henry L. Cady

The gist of the information that Rogers' study reveals can be summed up as follows: Students of all ages from grades two through six, both sexes, and any socio-economic status tend to prefer "popular" music over any other kind; this preference intensifies as students mature; the preference for popular music is greatest at the high school level; children from the upper socio-economic strata tend to have a greater preference for more serious music with diminishing intensity from the second grade to the twelfth grade but this preference remains significantly greater even in the high school years; children from suburban and rural areas do not differ in their patterns of preference.

These results were obtained by an investigation of two major questions:

1. What are the musical preferences of children at different age levels?
2. How are certain factors related to these preferences?
    a. Socio-economic status.
    b. Sex.

Eighteen specific hypotheses were stated and tested in order to answer these questions.

In order to examine these hypotheses, Rogers constructed a test based on the four classes of music developed by Keston. The method by which this test was constructed, however, leads one to certain reservations about the validity of the results obtained. Keston assumed that musical style preferences are revealing of taste and, therefore, taste can be evaluated on the basis of four categories of style--Serious Classical Music, Popular Classical Music, Dinner Music, and Popular Music. Assuming that this classification system is valid for children of the second grade, there remains the allocation of selections which experts can agree upon. For example, Rogers used a panel of experts to obtain a list of selections so categorized. These experts classified the "Scherzo" from Mendelssohn's Midsummer Night's Dream as "Serious Classical Music." They classified Grieg's Peer Gynt Suite #1 as "Popular Classical Music." Rogers failed to circulate this classification among other experts and failed to validate them with a sample of children. There is one other difficulty in the acceptance of these procedures. Rogers failed to report his procedures for selecting his panel, how many persons comprised the panel, and the competency of the panel in the matter of musical perceptions by children.

* Order number 18,037, microfilm $2.10.

Further steps in the development of the test also lead to difficulties. Each of the four Keston categories were allotted three selections and these were administered as paired comparisons in a round-robin process. This set of paired comparisons yielded 54 items and these were preceded by three practice items. The 54 item test was divided into three portions creating three 40-minute sessions because each of the 12 selections were arbitrarily limited to 45 seconds. There is no indication that Rogers' 45-second selection was validated as truly representative of the total composition in terms of children's perceptions or as an excerpt of sufficient length for a child to perceive representative stylistic characteristics. Too, no criteria are given whereby it was decided that a 40-minute session was not "too wearing on the children."

Rogers did find that the test was reliable but there remains the question of what it did measure. Regrettably, Rogers performed his pretest and a posttest on the same population. His posttest was a short-form, a procedure which is not completely acceptable to investigators as a whole. The absence of an analysis of the short form may be a reportorial omission only but there is no indication as to how the short form was compiled and whether or not it was checked for validity against the larger form. Concerning the elements of each pair, Rogers reports no statistical technique whereby the potency of each element in each paired comparison was determined.

The preceding criticisms notwithstanding, certain aspects of Rogers' study can be accepted with some credence and with considerable curiosity. The difference between "Serious Classical Music" and "Popular" music, e.g., between Franck's D Minor Symphony and Mood Indigo, can be accepted on face validity by musicians and even laymen. The finer distinctions in Rogers' study and technique whereby these distinctions were derived are the point of dispute. In spite of this contentious element, there seems to be the fact that the preferences of children tend toward such music as Mood Indigo with increasing intensity as they mature. The teen-age culture is a baffling one and the significance of this kind of taste development has considerable import to the music educator. What it means in terms of the educational process is another matter. It would seem that the music educator is in a losing battle, or is he? Perhaps the significance of Rogers' study is that another bit of evidence has been added to that side of the success-failure issue in music education which is marked "failure." In any event, Rogers has attempted an investigation of a vital area and more validating information is immediately important to music education.

As a postscript, this reviewer would add the following thoughts. The basic problem in the Rogers' study is common to literally hundreds that have passed through this writer's hands in the last few months. That basic problem is inadequate methodology for the examination of an idea. An all too common element in the problem of methodology is the failure to adequately validate instruments used in the study. To make assumptions deliberately is acceptable. To make assumptions by default is not acceptable. This is one of the most prevalent errors which renders useless about 90 percent of the research music education produces. Our profession is cursed with a quasi-social scientific approach to methodology. Some of this is an inadequate program leading to social scientific research. Some is inherent in the social scientific research process itself. It is difficult to create a "life" as Rogers has done. It is a quick and easy thing to do a "post-mortem" of that life, as this writer has done. At this point in the history of our profession, the music education researcher who is able to anticipate all of the variables in a problem is very rare.

Rubin, Louis. The Effects of Musical Experience on Musical Discrimination and Musical Preferences. University of California, 1951

Reviewed by Walter B. Duda

This study is important to music educators because it concerns itself with assessing the effect that musical experiences have upon developing musical appreciation. Two groups of students with contrasting musical experiences were studied to determine what effect their musical experiences had upon (1) their ability to determine variations in rhythm, melody, and harmony, and (2) their musical preferences. The 254 subjects selected were from grades seven, nine, and twelve. The Test of Musical Preferences allowed for the following categories of music: art music, folk music, and music of the transient current vogue. A Test of Discriminating Ability required the subjects to discriminate between two phrases with respect to any change and whether the change was rhythmic, melodic, or harmonic.

Data on musical experiences were obtained from a questionnaire which allowed for eleven categories of musical experience: (1) private study, (2) class study, (3) home record collection, (4) professional or active layman in the home, (5) church or community participation, (6) dance study, (7) musical radio programs, (8) concert attendance, (9) musical theatre, (10) musical movies, (11) musical television programs. From this were determined the two contrasting groups with high or low musical experiences.

A weakness in the scores obtained on the musical experiences inventory was in the weighting which Rubin assigned arbitrarily to each item. This arbitrary weighting produced a "score of sorts" which was to be representative of a subject's musical experiences. Rubin failed to consider participation in school or community organizations as unique; and these experiences were probably included in category 2 or 5. No attempt was made to determine the nature of the musical experiences within a category.

On page 124 the author states that "in the Test of Musical Discriminating Ability, both groups scored lowest on items of harmonic alteration." And on page 149 the author discusses the correlation coefficient of .31 between discriminating ability and the amount of musical experience. While positive, one would expect a much higher relationship in view of the extreme differences in the experiences between the high and the low group. One must beware, however, and not draw the erroneous conclusion that musical experiences have little effect in developing ability to make musical discriminations. Rather, one can postulate that the nature of the musical experiences was such that the ability to make musical discriminations was not developed.

Some supporting evidence of the latter statement is found in the analysis which Rubin made of some of the data. "The test scores of 50 subjects playing piano only and 50 subjects playing other instruments were correlated in an effort to determine the relationship between discriminating ability and piano study. Positive coefficients of .09 and .11 were obtained for the factors of melody and rhythm, and a positive coefficient of .41 was obtained for the harmony factor" (p. 150). Such low correlations led Rubin to the conclusion that "musical experience has little effect with regard to facilitating factors such as harmony, melody, and rhythm." These coefficient are so low as to indicate little relationship between piano study and discriminability.

On page 135, Rubin notes that both high and low musical experience groups had a marked tendency to believe they were hearing melodic alterations when in fact the alterations were rhythmic and harmonic. Rubin blames this on the emphasis placed upon melody in our listening habits. This writer, however, feels that the whole question of developing the ability to make correct musical discriminations is dependent upon developing an "imagery" for melody, rhythm, and harmony. Certainly the rote method of learning which is still so common fails to develop an ability for imagery.

Rubin concludes from his data that the subjects in both groups indicated their partiality for music in current vogue. "This fact was consistently demonstrated throughout the three grades. The data suggest in a very general manner a tendency for current music to increase in interest value, and folk music to decrease in interest value, as the student matriculates from the junior through the senior high school" (p. 137). In the light of the greater popularity of folk music today as contrasted with 1951 when Rubin made this study, it might well be of interest to study again the trend of the interest value for folk music.

While Rubin concludes that "the research has demonstrated that musical experiences as defined by the questionnaire, have little effect on the musical preferences of school students," (p. 152) the reader must avoid drawing the false conclusion that musical experiences do not or can not have an effect upon musical preferences. In this study, musical experiences are limited as delineated in the questionnaire. A similar study by Nicholas Erneston made in 1961 but defining musical experiences differently, arrived at other conclusions.

An interesting variation on this study may be to obtain two groups of students with contrasting musical preferences and to study the nature of their musical experiences and their ability to make musical discriminations. A study of this type would be effective either within a school system or between school systems. In any case, studies of this nature are limited by the definition given to musical experiences and the means for gathering data relative to musical experiences. This was probably the greatest weakness in the Rubin study, and the reader should keep it in mind as he examines the conclusions.

Savige, Homer Miller. *The Relation of Music Supervisory Services to Certain Phases of Musical Accomplishment in Selected Florida County Schools Systems*. **Florida State University, 1956**

Reviewed by C. A. **Childs**

As a supervisor of public school music this writer approached Dr. Savig's study with more than a mere cursory interest. The pilot qualities of the basic premise are commendable. It is an inquiry that needed exploration.

Any fears that one might have in regard to a possible negative outcome of this examination were quickly dispelled, however, with this statement on page one.

> Supervisory services are provided in Florida on the assumption that they are an integral part of the learning situation. It has been assumed that the services provided by the music supervisor are an important factor in raising the standards of musical accomplishments in the counties they serve.

Herein lies this writer's first concern for an otherwise sagacious investigation. Dr. Savige fails to document several stated assumptions even though the manner in which they are written are so convincing as to lead one to believe that he could have easily removed this fault by citing his source.

A second objection concerns the brevity in a discussion of related literature. Five studies in general supervision are covered in a two-sentence paragraph giving less information than a normal annotated bibliography. It is regrettable that after whetting the reader's inquisitive appetite, so little actual information is offered.

Dr. Savige begins his consideration of the effectiveness of music supervision with the statement that "the number of scientific studies measuring the effects of supervision in music however is very limited." (page 5) He convincingly discredits one study with very plausible reasoning, but dismisses another with the phrase: "most conclusive evidence in support of music supervision." (page 7) Such a statement should have given rise to further analysis.

In defining some terminology, Dr. Savige indicates the study is limited to "white sixth grade students". (page 8) Without further integration discussion this confines the significance of the study to a geographical area and hampers practical application. In defense of the author it must be readily admitted that there was, and probably is, no other way in which the investigation could have been successfully completed.

Chapter II is an excellent detailed resume of supervision in the Florida schools. This is followed by a discussion of the "Procedures of the Investigation" (page 19) in Chapter III which is logical, well organized, and clear.

Chapter IV is a comparatively lengthy attempt to equate the groups used for the study. Various tables indicate averages which purport to establish the equivalence. No further statistical evidence is advanced to support his contention that the groups are any more than similar. Averages as well as other measures of central tendency can be deceiving, and certainly the equating of his groups should have been treated with the same statistical measurements that Dr. Savige used to prove the differences between the supervised and nonsupervised groups in Chapter V.

It was disappointing that Dr. Savige did not use what seems to this writer a natural objective comparison between groups that readily lends itself to statistical analysis. This is in the area of time allotted per week for music at his various schools. He does make some comments which indicate little difference in time allocations but the treatment was not mathematically substantiated.

Chapter V is an examination of the results of the study. Table 22 (page 62) is a "Comparison of Autumn Scores (1955) Using the Kwalwasser-Ruch Test of Musical Accomplishment." The conclusions Dr. Savige has drawn from the data presented appear to be correct, but the t-value for the "total averages" seems high when compared to the t-values for the two groups and when compared to the other "averages". It is regrettable that a complete frequency distribution is not included in the final form of the study so one could duplicate the entire procedure and validate the findings. A portion of Table 22 is given here that the reader may better arrive at his own conclusions.

Table 22

	*Supervised		**Unsupervised		Difference	
Group	Mean	S.D.	Mean	S.D.	M1-M2	t-value
Large	52.62	27.55	44.89	22.70	7.76	4.56
Small	58.84	31.33	58.24	28.58	.60	.16
Total average	54.22	28.69	47.76	24.76	6.46	6.36

*N - 592 supervised **N - 567 unsupervised

Table 23 (page 63) is a "Comparison of Gains During the Five-Months Period as Measured by the Kwalwasser-Ruch Test of Musical Accomplishment." Some standard deviations in this table give rise to question. No explanations are given for standard deviations that approach twice or three times the size of the mean. Two things might cause this. First, the sample might be too small to insure accuracy. Second, the range might be large with an extreme positive or negative skewness. Since the quantity of students involved approaches 1,200 the first possibility is unlikely. Unfortunately, no measurement or statement of skewness is given. Since the frequency distribution is again omitted, an explanation in light of this seeming discrepancy seems advisable.

A portion of Table 23 is listed below so anyone interested may arrive at some conclusions of his own.

Table 23

	*Supervised		**Unsupervised		Difference	
Group	Mean gain	S.D.	Mean gain	S.D.	M1-M2	t-value
Large	6.42	16.95	6.69	18.12	- .27	.37
Small	18.29	21.62	7.91	17.49	10.38	4.29
Total average	9.49	18.99	6.95	18.03	2.52	7.90

*N - 592 supervised　　**N - 567 unsupervised

Despite the criticism of some points within the study, this writer is in general agreement with the author that the results seem to give credence to the assumption that "supervision appears to be effective in sponsoring the growth of skills in the areas tested." (page 68) It is an area that needed the scientific support afforded by this investigation.

Finally, Dr. Savige shows considerable insight into additional needed research. The proposed investigations he gives could have immediate classroom application. The recommendations (page 68) are listed here in slightly different form in the hope that someone will find at least one interesting enough to pursue it further.

1. How well are the children able to apply their music skills?

2. How are the music personnel and classroom teachers creating new interests and better attitudes towards music in the pupils?

3. What are the effects of supervision on the development of general music classes in the junior and senior high schools?

4. What steps can be taken to insure the preparation and inservice training of classroom teachers in their responsibilities to the elementary music program?

5. Are music programs affecting the quality of living in the community-relationships of Florida citizens?

Even the duplication of Dr. Savige's study in other areas of our nation would be a worthy effort.

MUSICAL TASTE AND SOCIO-ECONOMIC BACKGROUND, Indiana University, 1947

Karl F. Schuessler

Reviewed by Charles R. Hoffer

Schuessler's study is somewhat more broad than its title indicates. Not only is the relationship of musical taste to socia-economic status studied, its relationships to sex, age, religious background, nationality background, and musical training are also considered. Thus, the study is not adequately entitled.

After establishing a case for the fact that musical taste is a manifestation of human learning, the researcher proceeds to point out that in complex societies folkways such as musical taste become pluralistic. A brief review of related sociological and psychological studies is then included in the study.

Musical taste was gauged by having the respondents hear the first minute of eight musical selections ranging from "Drink To Me Only With Thine Eyes" and Bach's Toccata, Adagio, and Fugue in C Major to "Beyond the Shadow of Doubt," a hill-billy number. All selections were orchestral renditions. Respondents were asked to select one of three words describing the type of musical example, and also to state their feeling about the work by selecting a statement on a five-point scale. Three words were given for each composition from the following list: classical, old song, hymn, jazz, march, hill-billy, popular, and old waltz.

Data were collected from over 1,200 individuals in Evansville, Indiana. Although a statistically validated sample was not used, the researcher endeavored to sample a cross section of the adult community, and seemed to succeed rather well in doing so. Some rough measures such as the percentage of non-whites in the sample as contrasted with the available census data indicated that the sample was a generally valid one, although an overly large percentage of persons under thirty years of age was included.

Socio-economic classification was based on six occupational groupings developed by Edwards. (Warner's more complete work on social status was not yet available when this study was undertaken).

Data are analyzed in four acceptable ways for the date of the study. One is the determination of the degree of independence among the classifications using the probability indicated by the chi-square. The second is to compute the ratio of affirmative to negative responses to the musical selections by socio-economic groups. The third is to relate the variation in musical taste to differences in the musical background and degree of familiarity with the piece. The fourth is an attempt to estimate the relative importance of the factors that indicate an association with musical taste.

The results are mixed. There is evidence that age, familiarity with the work, and musical training are about as influential as socio-economic status in determining musical taste, the importance of the factor depending on the particular work played. Significant differences exist in the reactions to the various musical works. Age, for example, seemed to be the most significant factor in determining taste for popular music. Some of the factors correlate with each other. A person in a lower socio-economic class is less likely to be trained in music and also less likely to have a wide contact with it. Other factors included in the study appear to have an insignificant relationship with musical taste.

There are some weaknesses that reduce the value of the research. The most serious limitation concerns the scale used for the respondents to indicate their feeling concerning a musical work. The five statements are presented in the following order: 1.--like it; 2--like it a great deal; 3--dislike it; 4--dislike it a great deal; 5--undecided. Although other researchers have used similar terms for nonmusical studies (the attitude scale developed by Likert,[1] and the scale used in the Minnesota Teacher Attitude Inventory,[2] to cite two examples), at least their order formed a continuum from liking to disliking. In effect the respondents were forced to choose between definite positive or negative responses, or to admit they could not make up their minds. A better determination of the respondents' feelings could have been secured if a scale running from "like it very much" through some unfeeling classification such as "acceptable" to "dislike it very much" had been used.

The researcher's rating scale is so confining in its choices that sometimes little discrimination is found in an item. For example, "Drink To Me Only With Thine Eyes" was "dislike a great deal" or just "disliked" by 1.9 percent of the professional class and 4.2 percent of the semi-skilled class. (No one over the age of 50 disliked it!) It is difficult to come to firm conclusions on the basis of a 2.3 percent difference. The present reviewer would certainly feel confined if he were forced to express his feelings about a musical work only in terms of the scale used in the study.

Another weakness of the study concerns the attempt to have respondents classify the musical examples. This limitation does not, however, have as much effect on the date obtained as do the limitations of the rating scale just mentioned. "Drirk To Me Only With Thine Eyes" was identified by one-third of all listeners as a hymn, and one-tenth as "classical." "Old song" was the other and correct choice. Over 60 percent thought Tchaikovsky's "Andante Cantabile" was an old song, while most of the rest of the respondents thought it was "classical." One can understand why the respondents would sometimes have trouble selecting the right classification. No clear definition exists for many of the terms used, especially for a person with limited musical training. Furthermore, like people, many musical works contain characteristics of more than one classification.

Schuessler's study represents an earnest and in many ways a competent effort to study factors relating to musical taste. His sample was large, the data carefully gathered, and his statistical treatments satisfactory. Although revealing no data that could not have been anticipated, the study points to the importance of previous musical training, age, and socio-economic status in determining musical taste. The method of asking respondents to indicate their feeling about a musical selection and the effort to place it in a classification do not, however, increase the value of the study.

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[1] Likert, R. A Technique for the Measurement of Attitudes, Arch. Psychol., 1932, No. 140.
[2] Cook, W. W., Leeds, C., and Callis, R., New York: Psychological Corporation, 1951.

Sexton, Ada Jeanette. Music in General Education.* Michigan State University, 1963.

Reviewed by Parker Labach

Neither the title nor the abstract of Dr. Sexton's study adequately indicates the actual scope and points of emphasis of the research. Specifically, the author considers the role of music in programs of general education now available to students enrolled in four-year undergraduate colleges and universities in the United States. In the introduction it is stated that the study will include:

> (1) an analysis of the philosophical, psychological, and sociological foundations of general education, (2) an examination of the instructional organization or approaches of general education, (3) an examination of course structures of the humanities, and (4) an evaluation of course offerings in music or in the humanities and fine arts courses which include music.

Data were drawn from many recent (within the past 25 years) books and articles on general education, the humanities and music for the general student. Textbooks were consulted for content and emphases, a total of 1,700 college catalogues were inspected for course offerings in music for the "general student," and teachers or administrators in 20 unnamed institutions were consulted by letter for more detailed information which is neither specified nor tabulated in the study.

The author's reasons for undertaking this rather unwieldy problem apparently derive from certain convictions about the inadequacy of present musical opportunities in programs of general education. Among weaknesses cited are superficial or "snap" courses; pseudo-intellectual, dull courses; not enough courses; poor instruction; a lack of interest on the part of musicians in teaching the nonmusic major; the neglect of music in humanities courses; and a lack of creative or experimental activities in music for the general student.

It is stated that the "descriptive-survey method" is employed in data treatment. Chapter II consists of a review of general education: its philosophical, psychological and sociological foundations are explored through the literature; its purposes and objectives are similarly derived. In discussing the characteristics of general education programs, it is not surprising that the author finds much variety and complexity.

Chapter III explores music's particular role in programs of general education. A review of expert opinion leads the author to define the objectives of music in such programs in terms of appreciation, enjoyment, aesthetic growth, emotional growth, tolerance, development of discriminating taste, and active experience in the arts. With these objectives in mind, the organizations of typical instructional plans found in humanities programs are discussed, including distributional plans, surveys, great books or ideas approaches, historical approaches interrelationship-of-the-arts programs, and mosaic plans. Certain specific institutions are cited and various expert opinion again quoted. A variety of other musical opportunities for the general education student are then explored: various music courses and organizations, applied music, concerts, and radio and television. The author concludes, "Whether there are many musical opportunities or few for the general student is of less significance than the number of times the student takes advantage of the musical offerings and how deeply and wisely he enters into the communion of composer-performer-audience."

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*Michigan State University, 1963, order number 64-7542, microfilm $2.75, xerox $6.00.

In discussing the problems encountered in the area of music in general education, the author categorizes them as administrative (budget, space, staff, and "outside" influence), instructional (course organization and content, team teaching, and the use of materials) and evaluation problems. Specific instances are cited; pertinent questions asked.

Following the foregoing sections of the study, the summary becomes a kind of summary of a summary, but it is nonetheless competently done, particularly in consideration of the variety of material introduced throughout the study and the broad stated objectives. The author's conclusions, nine in number, are too lengthy to state here, but may be paraphrased in the following way: Programs of general education must be designed according to the individual needs of particular groups of students and institutional requirements; the great variety of such possibilities makes the evaluation of such offerings difficult except in particular individual instances. The maintenance of good courses in music in general education depends on strong administrative and faculty support, proper student orientation to the opportunities and perhaps, most of all, good teaching. There is presently a rise in the general education requirements (including music) in some institutions and opportunities for such courses are being extended more into the upper division and down into the high school (general music or humanities courses). The content emphasis is moving from factual knowledge to broad principles and the stimulation of intellectual curiosity.

Recommendations for future research (including such vital areas as the nature of aesthetic growth, the teaching of attitudes, the role of creative and laboratory experiences, the preparation of teachers for general courses, and the factors in such courses which promote interest in humanistic study in later life) are listed. The bibliography is adequate and extensive although the relative vastness of the area of study suggests the impossibility of a comprehensive list of references.

Comments

1. The reviewer found the study both enjoyable and thought provoking in spite of the fact that it is relatively unfocused and undertakes a larger problem than can be handily dealt with in one dissertation.

2. The primary value of the work is in the questions that are raised, the implications that appear "between the lines." The numerous quotations are well selected and persuasive. The reader will find that the study will help him to organize his own thinking about his own unique attitudes and problems.

3. It would have been helpful if the author had included some data (such as that derived from catalogues, or from the 20 individual contacts) in summary or tabular form. The reader is at loss to know just what uses were made of some of this material.

4. The reviewer is entirely convinced (and has been for a long time) of the importance of music courses and other musical activities in general education (i.e., for the nonmusic major). He is also convinced that much of the teaching of music to the "general" student is poor, and that most of the blame for this state of affairs rests with music department heads and faculties who attach little importance to this work in comparison with that of their more and more conservatory-oriented music major programs. Teaching music to the intelligent amateur in an interesting and academically respectable way seems a rare and little rewarded occupation. This condition is mentioned in the study, but needs a far greater emphasis in future work on the problem.

5. Although answering few questions, the study succeeds in bringing together much information and comment which can be valuable to anyone responsible for any kind of instructional program in any of the arts and humanities. It is hoped that more activity in this vital area will be stimulated, whether in the form of research or in bolder attempts at improving curriculum and instruction. There is more knowledge now than is being applied.

Shull, Carl N A Study of Children's Vocal Literature Written by Selected Distinguished Composers. Florida State University, 1961

Reviewed by Bessie R. Swanson

Part I. A Study of Children's Vocal Literature

In this dissertation Mr. Shull states his purpose for the study as two-fold: (1) To investigate song literature written by distinguished composers, to discover the scope and nature of music written for children's voices and (2) to study current published music series to discover to what extent this music literature is being used or might be used.

Mr. Shull limited his study to a consideration of vocal works written for children's voices (excluding those to be sung by adults to children, or those in which children's voices are used in combination with adult voices). Only nineteenth and twentieth century composers were considered; entries in Grove's Dictionary of Music and Musicians and Baker's Biographical Dictionary of Musicians established the composer as "distinguished."

The characteristics of current school song material were determined by a study of three elementary music series for grades one through six: The American Singer, Music for Living, and Together-We-Sing.

In seeking compositions written by distinguished composers for children's voices Mr. Shull compiled an impressive list. Appendix B, pages 205 to 242, shows titles of 1,000 compositions (approximately 88 separate songs and 76 collections or multi-part works) by 129 composers with facts about publication.

As a result of his collection and study of materials Mr. Shull states that "A few composers have written extensively in this media and numerous composers have contributed a few songs. It is observable that significant numbers of composers from Great Britain and the United States have contributed to children's [song] literature with Russia, Hungary, France, and Belgium represented in fewer numbers."

Mr. Shull's chief concern in Chapter II is an attempt to establish the characteristics of distinguished composers' children's songs. In this reviewer's opinion Mr. Shull encounters serious difficulties: The musical material being considered is widely varied. While it is possible to determine the characteristics of a single work of art by one composer, and more difficult to state the combined characteristics of works by a single composer, it is almost impossible to make reasonable generalizations about a group of works representing over 70 years of the composer's art, which is what Mr. Shull has in hand. A writer who would undertake such a task must be skillful in his discussion of compositional techniques and he must be very careful with generalizations lest he seem to contradict himself.

In Chapter III Mr. Shull analyzes the musical characteristics of the songs in the three series he studied and compares the generalizations with those he made in reference to the composers' songs in Chapter II. Several interesting comparisons are made; however, before describing these, this reviewer would like to point out a weakness in the reasoning for this chapter.

Mr. Shull believes that children should have experience with the song literature of distinguished composers, but in this chapter he tries to argue the case by pointing out in what ways the composers' children's songs are similar to those currently found in the school music series. It is this reviewer's opinion that the composers' songs should be included because they have characteristics that are unique and will widen children's experience with music beyond that which is possible through experience with good folk music of many countries (the present "musical diet").

In the first section of this chapter Mr. Shull considers the frequency of appearance of distinguished composers' children's songs as elementary school music series material. In the three series that he reviewed Mr. Shull found few children's songs by distinguished composers. Only six of the songs that he discovered in his research were included in the three series; several other songs, by composers not included in Mr. Shull's list, had been especially commissioned by the series editors.

In his conclusion to this section (page 48) Mr. Shull states: "Editors and publishers, even though they have to some extent realized the importance of keeping children abreast of contemporary idioms by commissioning composers to write for their respective series, have for undetermined reasons generally neglected this body of children's music."

One can agree that, as far as the school music series are concerned this is indeed a generally neglected body of children's music, but this reviewer is not of the opinion that the reasons for this situation are as "undetermined" as Mr. Shull holds them to be.

If, as this reviewer believes, the greater value of the composed children's songs lies in their artistic value and to some extent their uniqueness, then a skilled musician is required to teach such songs. In general, classroom teachers can deal successfully only with the type of song with which they are familiar. Since editors of school music series are concerned with providing material for the teacher with average competency it is understandable that few songs requiring greater skill have been included in these publications up to this time. On the other hand, every song in the most recent school music series has been recorded. These recordings are steadily improving and it is reasonable to hope that in the future such children's songs could be available in books and on recordings, both for listening and for singing.

In the second section of Chapter III, Mr. Shull reviews the theoretical elements stressed by the series books and the presence of these characteristics in the composers' children's songs.

Melodic aspects

Many melodic characteristics were found in common between the two groups. The most notable difference was that although skips along the tones of chords, especially the primary chords, are emphasized in the series, this characteristic is not found for extended periods or in many numbers of the composed songs.

Rhythmic aspects

Mr. Shull observed that "The appearance of two or more signatures, not an especially important feature of the series songs, occurs with greater frequency in children's literature, notably those by contemporary musicians, ..." He also noted that the study and observation of syncopated rhythmic patterns is recommended in the series and these are present in abundance in the composed literature.

Formal aspects

Mr. Shull reports that the composers' "strophic songs resemble more closely songs of the elementary school series in formal structures." He found (page 59) that in the series songs "emphasis is directed toward songs containing from two to six different musical phrases in varied combinations. The development of sensitivity to regular phrases (two- or four-measure groups) receives most attention in the series. An apparent objective of each series is to cultivate a feeling for regular consistent organization and then to compare the irregular feeling of phrases containing three, five, six, or seven measures." However, in the composers' songs "Irregular length phrases and odd numbers of phrases are almost as numerous as regular balanced forms." (page 61).

Harmonic aspects

On pages 63 and 64 Mr. Shull says that: "Although most of the elementary series songs are based on primary and secondary chords of the diatonic key, some of the series material is occasionally enriched by chromatic harmonies, altered chords, seventh and ninth chords, and a few songs (usually by contemporary composers) are harmonically nonfunctional. While most of the composers' music studied had functional tendencies, much of the literature contained various stylistic techniques which were used to vary and enrich the traditional chord structures and the usual key relationships."

In spite of some differences found between the two bodies of song material Mr. Shull summarizes: "In general, these theoretical learnings stressed by the series could be taught adequately from literature by the distinguished composers."

Other similarities and differences of the two bodies of literature

1. Most part-writing in the series songs is homophonic and isorhythmic while "the part songs of distinguished composers are predominently

based upon contrapuntal techniques or proceed more independently so as to equalize the melodic value of the parts."

2. The intervals between parts of the composers' songs are more varied, less consistently parallel, and less consonant than the series material.

3. Whereas the composers' songs showed from two to nine parts, most of them were written for two or three parts which is the number usually found in the series songs.

4. "Canons in the series are usually at the unison while some of those by distinguished composers are at other intervals.... Particularly in the music of the distinguished composers, canonic passages alternate with homophonic sections."

5. Mr. Shull reports (page 68) that: "...although there appears to be little difference between the two bodies of literature in respect to range of parts, there is a wider gap separating the music in regard to tessitura. The composers frequently write extended periods in high or low tessituras, a practice not prevalent in the series songs."

6. Some of the composed songs were found to be longer than those in the series, but many of shorter length are available. No songs in the series demanded the dynamic variation found in the composed songs that were studied.

7. Mr. Shull found that all of the song series studied contained the three general types of accompaniment treatment observed in the composed songs (a) doubling the voice lines, (b) sometimes independent, and (c) more or less completely independent), but that there was a definite leaning toward the first two types. He also observed that there was a greater variety of simple accompaniment in the series (parts written for bells, rhythm instruments, and some orchestral instruments). Accompaniments of the composed songs were mostly for the piano; some were as simple as any of those in the series, but others were much more complex.

8. Due to nationalistic reasons some of the texts of a few of the composers' songs would not be appropriate for American children (pages 73 to 75). In general, however, Mr. Shull felt that the subject matter of the distinguished composers' children's songs falls within the categories set up in the series. Texts are generally syllabic in both; one main difference is that the composers tend to repeat textural phrases, fragments, or words, especially in nonstrophic songs.

As a result of his research Mr. Shull concluded that: "The body of music written by distinguished composers for children's voices alone is not only extensive, but varied both musically and textually" (page 76). He found that it contained music of many levels of difficulty and for many purposes. Some barriers to the use of the composed material in the graded texts have been suggested earlier. Mr. Shull lists the following as "among the chief reasons restricting some children's songs from consideration as series material" (pages 78 to 82):

1. Larger range
2. Extended low or high tessitura
3. Variety and complexity of parts
4. Length
5. Complexity of accompaniment
6. Religious orientation
7. Vocal difficulty
8. Difficulties of translation
9. Ownership and publishing rights
10. Unavailable, recent compositions

Using the songs of the three series texts analyzed as a guide for evaluation Mr. Shull concludes that there is a considerable body of songs that would be appropriate as series material.

Part II. Analysis of Children's Songs Written by Distinguished Composers

Within this chapter, pages 88 to 200, Mr. Shull considers selected children's songs by 11 composers. The section for each composer includes: (1) a brief biographical sketch, (2) group and individual titles of songs selected, (3) publishers and dates of publication, and (4) survey of the works as a group, using the approach to an analysis of text and music developed in the preceding chapters.

The composers and titles of collections studied are as follows:

Jean Absil (Belgian)

Six Choeurs pour Voix d'Enfants, Opus 18, Vol. I, 3 unison songs, Vol. II, 3 two-part songs composed in 1935 (Brussels: Vriamont, n. d.)
Printemps, Opus 59, 5 unison songs composed in 1944 (Brussels: Schott Freres, 1951)

Bela Bartók (Hungarian)

Nineteen children's choruses, first published by Magyar Korus (1937) and later as Korusmüvei (Budapest: Zenemukiado Vallalat, 1955)

Benjamin Britten (English)

Three Two-part Songs (London: Oxford Univ. Press, 1932)
Friday Afternoons, Opus 7, Vol. I (1-6), Vol. II (7-12) (London: Boosey and Hawkes, 1936)

Alexander Gretchaninoff (Russian-American)

Aye-Doo-Doo, Opus 31, 6 two-part songs composed in 1903 (England: Boosey and Hawkes, Inc., n. d.)

Edvard Grieg (Norwegian)

Seven Children's Songs, Opus 61, composed in 1894-95 (London: Augener Ltd., n. d.)

Joseph Haas (German)

Rum bidi bum, Opus 33, 10 songs (Munich: F.E.C. Leuckart, 1953)
Trali Trala, Opus 47, 12 songs (Mainz: B. Schott's Söhne, n. d.)
Six Canons (group title or publisher not clear)
Six Songs, Opus 44
Deutsche Kindermasse (Mainz: B. Schott's Söhne, 1958)

Zoltán Kodály (Hungarian)

Korusok (3rd Ed., Budapest: Zeneműkiede Vallalat, 1942); 12 songs are selected out of a collection of 50.
Tantum Ergo V (Vienna: Universal Edition, 1928)

Ernst Křenek (Austro-American)

Three Madrigals, 1960
Three Motets
Rounds

Alex Rowley (English)

Wublements, 15 songs (London: J. Curwen & Sons, Ltd., 1925)
Little Robin, 20 songs (London: J. Curwen & Sons, Ltd., 1955)
Sing-Song, Part I (1-6), Part II (7-12), composed in 1956 (London: Boosey and Co., Ltd.)

Jean Sibelius (Finnish)

"Aamusumssa" (Morning Mist), published in a collection, Kansakoulun Lauluja, Helsinki: 1910.
"Kansakoulalaisten" (Folk-School March), published in Lauluoppi Kansakoulua Varten (Folk School Song Book), 1896.
"Louluti" (The Way to School), published in 1925.

Antonio Veretti (Italian)

4 Cori per Fanciulli (Milan: G. Ricordi & Co., 1953)

The songs that Mr. Shull analyzed in detail for the purposes of his study are listed above so that the reader of this critique might have some idea of the variety of material that is available. As suggested earlier, one of the great weaknesses of this dissertation lies in Mr. Shull's attempt to generalize about the characteristics of extremely varied musical compositions. However, by reading Mr. Shull's report on each composer, one can get some idea of the possible uses for these compositions--whether for classroom books or choral purposes, etc. This writer felt, however, that more value might have been derived from the study had Mr. Shull devised an analytical form that would have shown the main characteristics and possible use of each composition and/or collection. In its present form the reader is obliged to scan several pages of generalizations in order to pick out clues that will help him determine whether he would be interested in obtaining a particular composition.

Mr. Shull's analysis is helpful when he occasionally compares groups of works by a single composer. In discussing the works of the composers Mr. Shull shows brief three- or four-measure examples to illustrate points concerning characteristics of rhythm and harmony. He reports (page 97) that the children's songs composed by Jean Absil "have not revealed Absil's extreme experimental attitude in rhythm or harmony. They do reveal a composer's effort to achieve an original style of writing for children founded on traditional elements, but containing stylistic techniques peculiar to the twentieth century." Two fragments of unison songs show in the accompaniment the use of ninth and eleventh chords, chords with added sixths and seconds, and the use of chord structures containing major sevenths or diminished octaves (pages 93-94). Such examples are useful and give substance to a discussion that is otherwise weakened by many generalities.

This dissertation may help bring to the attention of music teachers, editors and publishers some of the great body of children's song literature that is available. It would be helpful if an up-to-date library or depository of manuscripts or sample copies could be made available. Such a facility might be of help to the composer in having his works known, published and used, and to music educators who always are in need of good new material.

It is unfortunate that Mr. Shull chose to think only in terms of the use of these works in series books within the traditional framework. Many of the works have been published and undoubtedly are and have been sung by children in other situations. One of the best uses for many of the songs would be within the repertoire of elementary school choirs, of which there are many. On the other hand, the greater availability of recorded music could bring more of these songs into the music program of the general classroom as suggested earlier in this review.

Mr. Shull suggested five related areas for research:

1. Works cited but not available for this study.
2. Works of this kind by composers in other countries.
3. Choral works for combinations of adult and children's voices.
4. Dramatic productions intended for children's performance.
5. Arrangement for children's voices of folk and non-original song material by distinguished composers.

It is hoped that further studies of this nature will result in more comprehensive annotation of individual works rather than generalized analysis of groups of works. When the researcher is qualified he might suggest grade levels and interest areas in which a particular work would be most widely useful.

Silverman, Marvin L. Ensemble Improvisation as a Creative Technique in the Secondary Instrumental Music Program. Stanford University, 1962.

Reviewed by A. Oren Gould

Often the instrumental music curriculum, which should lead in the education of the creative person, falls into the snare of substituting technical achievement for creativity. Recent emphasis on participation in small groups (chamber groups, dance bands, theory classes) has provided some enrichment for the core (band, orchestra) of the traditional instrumental music curriculum, but there is much evidence to support Mr. Silverman's contention that there is seldom anything in the content of the secondary school music curriculum to provide continuity for the creative activities of music begun in the elementary school.

In this study, Mr. Silverman explores the feasibility of a new small group activity, Ensemble Improvisation, and suggests the addition of this activity to the instrumental music curriculum at the secondary level. He suggests numerous benefits which may accrue for the high school instrumentalist as a result of his learning to improvise with other members of a small instrumental group: (1) The almost forgotten (except in jazz) role of the musician as composer-performer will be restored; (2) music theory will be made a living part of the high school musician's equipment, as his imagination and creative powers are excited; (3) the relationship of the high school musician to music will be altered from that of the trained executant of composed works to that of the creator following his own artistic impulse in performing his own music in conjunction with his fellows; (4) creativity as a primary goal of music education will be restored.

Using the syllabus of Lukas Foss and Richard Dufallo's Ensemble Improvisation,[1] the study is designed around the central question, "Is it possible for high school students of instrumental music to learn and use ensemble improvisation with some degree of success?" Employing the techniques of action research, the author sought the answer to this question by forming two experimental groups of students to be observed and evaluated by a panel of experts. The first of these was a volunteer group of Stanford University music students who provided the laboratory training group for Mr. Silverman's own mastery of the Foss system of ensemble improvisation, and for developing the teaching techniques necessary for effective use of the Foss-Dufallo syllabus.

The second group consisted of eleven instrumental music students from Cubberly High School in Palo Alto, California, selected for their outstanding ability in instrumental music.[2] This group met for one hour three times each week for a semester, and under Mr. Silverman's guidance was taught the Foss system of ensemble improvisation. Beginning with the Foss Guide Tone system and the Guide Tone Scale the students learned the Foss tonal formula in easy steps. When a fair degree of understanding of the system was in evidence, again in easy steps, the group learned to improvise separately melody, harmony, counterpoint, and what Foss terms "Solo" and "Follow Solo." Following this, various ensemble exercises which were designed to combine the elements of melody, harmony, counterpoint, "Solo," and "Follow Solo" were engaged in. Some of these resulted in improvised compositions having some degree of unity and expressiveness. Several of these were taped, written down and analyzed by the group.

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[1] Lukas Foss and Richard Dufallo, Ensemble Improvisation, unpublished manuscript.

[2] Actually the group proved to be preponderantly gifted students as revealed by a mean score of 92.01 on the School and College (SCAT) Test given them.

The culminating ensemble exercises which had been placed on tape, were auditioned by the panel of experts as one means of evaluating the experiment. To aid in their evaluations, the experts had access also to the anecdotal record kept by the author of each of his sessions with the high school experimental group. Criteria used by the evaluating panel included the following areas and questions:

1. Creativity. Can ensemble improvisation lead students to a specific technique of creativity.
2. Heuristic Function. Are students placed in the position of having to think of music as creators? In order to improvise well, to create successfully, do they have to seek new knowledge and skills?
3. Skills. Does ensemble improvisation by virtue of its demands on the player lead to the development of increased listening and playing skills?
4. Style. Does ensemble improvisation foster greater awareness of differing musical styles?
5. Relationship to Large Group Performance. Will these students become more effective participants in their school bands and orchestras as a result of the experience gained in the study?

Answers to these questions were given by each member of the panel of experts in terms of the evaluations mentioned above and in terms of observations of each student's behavior during a follow-up period of a few months duration after the conclusion of the experiment. Panel members were also asked to give general comments and personal opinions about the project.

A tabulation of answers to the questions revealed that panel members agreed on "yes" answers in all five categories with some qualifications. In the area of creativity, while the panel felt that the students had learned to use a specific technique of creativity, they were doubtful about the amount of transfer to the formal process of composition. They found the samples of improvisations lacking in expressive intensity and structural unity. In the area of heuristic function, it was recognized that the students were led to see the need of greater knowledge of harmony and were motivated to strive for a better command of the basic elements of music. Evidence of improvement in musical skills was found in the area of listening and integrating skills of matching and imitating, of using rhythms creatively and playing expressively in relation to what others in the group were expressing.

Increased understanding of musical style was observed in terms of subsequent enjoyment of modern music, but the evaluating group failed to note an increase in the awareness of differing styles of music. Improvement in the effectiveness of the students as members of large instrumental groups was noted, particularly in relation to behavior resulting from new insights into the total structure of the music being studied and into the function of the individual player in relation to the total performance.

Generally the panel felt that the improvising activities would have been more meaningful if combined with the study of theory and history of music; that contact with "all sorts of styles" should have been provided; that perhaps some other harmonic basis than that used might have been employed with greater effectiveness, or the harmonic basis broadened to include styles of various periods.

From the comments of the panel and from his own observations during and after the experimental activity, the author drew the following implications for music education:

1. Ensemble improvisation can teach a specific technique of creativity to talented students.
2. Improvisation will encourage the student to further study in music.
3. Improvisation augments the small group aspect of the instrumental music curriculum in a unique way.
4. Improvisation develops the aesthetic decision-making ability of the music student.
5. Improvisation can favorably influence effectiveness of students in large instrumental music groups.
6. Improvisation provides a substantive area of study for the music curriculum.
7. Improvisation tends to meet stated needs of the secondary school music curriculum in terms of creativity.

It is interesting to note that most of the implications for music education are not claimed specifically for the Foss-Dufallo system of ensemble improvisation but for the activities of ensemble improvisation generally. It would seem from the account of the experiment that much of the time allotted for the improvisation activities was spent in learning the Foss tonal formula --a difficult task for students with little background in traditional harmony, theory or understanding of musical structures and styles. The reader is led to speculate as to the results of the experiment if the tonal system and styles employed had been more closely related to the students' prior experience with music.

Mr. Silverman was well aware of this and recommended that future studies of ensemble improvisation experiment with other harmonic systems such as the tonic-dominant area system, the tone row system, the whole tone or pentatonic system, a modal system or combinations of two or more systems. Various styles suggested for use in future studies included classical style (periodic structure), motivic limitation in the dodecaphonic style and various jazz styles. It is pointed out in the author's concluding remarks that the group used in the study consisted primarily of gifted high school students. Future studies of group improvisations with junior high school or elementary school age subjects, and those of varying ability levels, should yield significant results for music education.

Slaughter, Jay L. The Role of Music in the Mormon Church, School, and Life.*
Indiana University, 1964

Reviewed by Gary M. Martin

The author employs a historical approach to his topic with the purposes and delineations of the study serving as criteria for determining dissertation content. The purposes of the study are listed as follows:

1. To identify the ideology of music and music education in the Church of Jesus Christ of Latter-Day Saints.
2. To survey the history of music and music education in the church.
3. To study the practices and procedures in music and music education in the church today.

According to the author, music in the church revolves around (1) the church services, (2) the church schools, and (3) family life. All three areas are examined. Delimitations of the study are as follows:

1. No effort was made to deal with "Mormon" hymnody because of extant scholarly works on the subject.

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*order number 65-423, microfilm $5.30, xerox $18.70

2. The study was limited to policies and practices associated with the headquarters of the church in Salt Lake City, Utah.

The study begins by examining the ideological basis for music in Mormonism as it is explained in the four accepted scriptural documents or "standard works" of the church. These four documents are the following:

1. The Holy Bible
2. The Book of Mormon
3. The Doctrine and Covenants
4. The Pearl of Great Price

Through these scriptures music is shown to be both eternal and celestial in nature; being present during the spiritual pre-earth existence of mankind, during ancient times in the Middle East as reported in the Bible, during ancient times in the western hemisphere as reported in The Book of Mormon, and during modern times as reported in The Doctrine and Covenants and subsequent writings. The use of music in future events is described by quoting and commenting on prophesies contained in the scriptures, with special emphasis on The Doctrine and Covenants. The author has made a laudable effort to locate and comment on scriptures relating to music in these Latter-Day Saint scriptures.

Data not reported in related research but pertinent to the topic were gathered and utilized in subsequent chapters of the study to place music in its proper perspective under the nine presidents of the church. Each president's tenure of office was treated as an "epoch" during which musical practices were examined. Many events of significance to the history of the church (and to the settlement of the western states) are described. Among such events a number are mentioned below:

1. In 1841 the University of Nauvoo (Illinois) adopted Lowell Mason's Manual of Instruction as the text to be used for examining teachers in the elements of the science of music.

2. Organization of the Nauvoo Brass Band.

3. Music in the Mormon Battalion (a surprisingly ambitious music program is described).

4. The development of Mormon folk songs.

5. The development and perpetuation of the Mormon Tabernacle Choir (1849 to the present).

6. Deseret Musical and Dramatic Society (Salt Lake City, Utah).

7. Construction and use of the Mormon Tabernacle and organ.

8. Music in all auxiliary organizations of the church.

    a. Sunday School
    b. Mutual Improvement Association (youth organization)

   c. Primary (childrens organization)
   d. Relief Society (womens auxiliary)

9. The development of a music curriculum at Brigham Young University (including examples from the 1901 curriculum).

10. Organization of the General Music Committee.

11. Organization of State Music Committees and Ward Music Committees (1947).

12. Introduction of a song practice period in Sunday School to improve quality of congregational singing.

At the conclusion of the study several recommendations were made by the author:

1. The church needs to develop an active music training program for its lay leaders.

2. The church needs to develop (a) more adequate standards for music to be used in services, and (b) recommended lists of such music.

3. The church needs to coordinate the purchase of musical instruments for its chapels and other religious centers.

Comments

The study is well organized, and the author was quite successful in his attempt to (1) establish a clear perspective of music in the church, and (2) trace the historical development of musical practices currently employed in church related activities. Persons interested in the ecclesiastical aspects of music in America will find the study both informative and interesting.

Slind, Lloyd H. A Proposed Program for the Extension of Music Experiences in the Elementary School. **Florida State University, 1955.**

Reviewed by Walter B. Duda

Current theory and recommended practice in the teaching of music is vastly different from the philosophy that supported the content and method of the traditional "singing school" or "formal discipline" concept. The practice of the singing-school assumed certain musical values as being "true" and universally good; therefore, a music program should persevere in the singing of the predetermined beautiful songs. Musical proficiency could be attained, according to the formalistic approach, by the acquisition of verbal knowledge--note reading, rules and relationships.

Contemporary music educational theory, on the other hand, gives consideration to "the individual differences in capacities and interests, motivating factors, and potential for continuing change and growth." (p. 1). In practice, however, the potential of a multi-sensory appeal of an enriched musical context combining rhythmic, harmonic, and melodic values, is almost totally neglected. To enrich the elementary school music program in grades four through six, the author suggests and develops ways and means: (1) to extend learnings in the elements of rhythm, melody, and harmony; (2) to integrate these three elements; and (3) to apply the theory of integrated elements to materials usable in the classroom.

The music heard via mass media is too far removed in texture and in style from the unison singing in the classroom. A survey of current texts showed that the collections consisted primarily of melodic literature for vocal purposes, employing a limited use of rhythmic and melodic extensions, with harmonic materials noticeably lacking except for piano accompaniments in the teacher's manual. Opportunities for part-singing were limited, and an opportunity for instrumental experiences was almost totally omitted.

The dissertation limits itself to the music program in grades four through six. No attempt is made for correlation or integration with other subjects. Activities are considered only in terms of their musical value; and, for purposes of illustration, only melodies conforming to primary chord structure (I, IV, V^7) are used.

In Chapter Two, Slind discusses the discouraging results that have been encountered in trying to develop reading ability through singing activities per se. He suggests an alternate approach through rhythms as an earlier experiences; this may have a greater effect in increasing general reading ability, as well as in assisting in developing form concepts.

The advantages to be found in this approach are the absence of the pitch dimension, the absence of technical and manipulative problems as encountered in pitch-producing instruments or in singing, the high motivational value, and the melodic value.

In support of the motivational value of this approach, Slind quotes from Kate Hevner's study to show that "the melody, at least the rising or falling of the melody, is of much less importance than the harmony, or rhythm of music."[1] This study shows that rhythmic activities are of paramount interest to children; it is therefore presumed that the learnings associated with rhythmic activities in the understanding of symbols can be facilitated and increased.

To support the melodic value of this approach Slind refers to Bingham who says that "it is not the sensory but the motor phase of the circuit that contributes the unity"[2] characteristic of melody. Teachers' manuals also support this notion. "The basic power in reading depends primarily upon recognition and performance of the rhythmic patterns rather than of tonal patterns."[3]

An outline of procedures and examples for rhythmic reading are presented; these include bodily movements to music, freely played patterns, the playing of notated rhythms, and the creating and notating of rhythmic patterns. Notated patterns are typed as: melody-rhythm patterns, strong-beat patterns, and independent-phrase patterns. A developmental approach is suggested which minimizes the presentation of the unlike note and rest values in the earlier stages.

The child's first experiences are with numerous and varied rhythmic activities. Early activities in rhythm are approached through bodily movements and later with rhythm instruments. After the child has learned to play many kinds of rhythm instruments by ear as well as through the use of notation, the child is ready to compose and notate a rhythmic pattern to a song. The text of a song is copied on the board with the inflections indicated by bar lines. The numerous rhythmic patterns suggested by the children allow for a discussion to choose an instrumentation and a pattern which most contributes to the overall effect.

The development of form concepts is achieved by playing appropriate rhythm instruments to rhythmic patterns which the children have helped to create and to notate as an accompaniment to melodies to be sung or played. In this way the child experiences phrase and sentence structure. To facilitate the understanding of the larger forms, instruments which contrast in tone color are assigned rhythms and are played with the corresponding theme.

Slind suggests that future music texts and music programs provide for far greater emphasis upon rhythmic playing throughout the grades.

The purpose of the third chapter is to show how the instrumental playing of melodies can supplement and extend vocal melodic experiences.

The playing of musical instruments not only provides an additional medium for musical expression, but for some children the only medium for the expression of music. In addition, playing experiences and associative learnings contribute to improving singing ability. "Individual voice tests with the piano, measuring the ability to sing the diatonic scale, prove that ranges of children with unreliable voices can be appreciably increased by the making, tuning, and playing of instruments."[4] Furthermore, learning to read musical symbols is simplified since one does not have to contend with a text, and the fixed pitch of the instruments allows for quick and accurate reading.

A good approach for introducing children to instrumental literature is the playing of selected orchestral themes; this aids in increasing familiarity with the themes. Normally, instrumental literature is presented only by recordings or by the radio. The sparseness of instrumental literature in the current music series evokes the suggestion that a liberal quantity of instrumental music be included in graded textbooks "for the development of technical facility and for broader musical values." (P. 20)

To attain instrumental experiences, orchestral instruments are the most desirable, but their complexity and cost limits their use to the few rather than to the multitude. The choice is upon simple melody instruments such as the plastic wind instruments and prepiano keyboard instruments. The limitations of these instruments are a negligible factor. "More and more, music educators are considering playing upon instruments less from the viewpoint of the product, which is heard by the listener, than of the effect that is produced upon the player, which is not always evident to the listener. This effect is quite as great on ordinary players with simple instruments as it is on talented players with difficult instruments."[5]

The materials chosen for introducing simple melody instruments should be considered for their technical difficulty and musical value. The extension of melodic experiences on simple melody instruments is pursued after the learnings and activities with rhythm in grades three and four.

Examples of music showing progressive degrees of difficulty, both technical and rhythmic, are illustrated. Orchestral instruments by those who are proficient upon them are included to provide real experiences of timbre and quality.

The apprehension of form and structure can be facilitated by the judicious use of instrumental tone colors to contrast phrases. The pairing of short selections into little suites can provide experiences for contrasting mood, tempo, key, or instrumentation. This experience develops an understanding and an appreciation for the larger forms usually heard on recordings.

An example of key contrasts begins with the choice of an appropriate short selection in the key of "G." The contrasting selection chosen should be in the key of "D." A da capo to the first selection is made by adding a "D" dominant seventh chord at the close of the second selection.

Chapter Four gives consideration to harmonic learnings and their applications to chordal accompaniments, to foundation parts, and to piano accompaniments. Chordal accompaniments are related to the autoharp. The need for developing ability to construct chordal accompaniments is desirable because current texts rarely include chord notations. The learnings necessary to be able to construct chordal accompaniments are readily grasped, and the application of these learnings for further enrichment possibilities is notable.

The principles for determining chordal outlines from a melody of simple harmonic structure are (1) to identify the strong beat notes and (2) to match the identified strong beat notes with notes of the two primary chords (I and V^7). In the case of "so" which belongs to either chord, only playing the chords will determine which is appropriate. It is desirable to create situations which require the making of a choice between two chord colors because this establishes an attitude for listening to color characteristics and chord progressions. Melodies using three chords require even greater discrimination to make the correct chord choices.

Foundation parts are formed from the root notes of chords. In determining the chordal outline of melodies, the chord notation provides a foundation part which can become a new vocal or instrumental part. Since only two or three notes are involved in a foundation part, instrumentalists with little experience can easily play these parts, thus adding interest and variety. As playing facility develops, foundation parts offer opportunities to explore and to include passing or auxiliary notes and/or rhythmic treatment.

Foundation parts provide an easy and an early approach to two-part singing. Furthermore, the development of reading proficiency is facilitated through foundation-type melodies because of experiences with these tones and because of the strong tonal tendencies which these tones have. The traditional two-part songs tend to emphasize only one type of vertical interval; whereas, the melody with a foundation part offers a variety of vertical intervalic relationships. Intervals of thirds and sixths do not always clearly identify the chord and thus lead to inaccuracies in pitch Adding a foundation part to a traditional two-part arrangement clarifies and simplifies the chordal structure.

Piano accompaniments should be included in music texts for children to play as a part of their developmental experiences with music. Procedures are proposed by the author for the construction of right-hand accompaniments beginning with block chords based upon earlier experiences with the autoharp and realized in notation on the staff. Root positions of the chords evolve into inversions to facilitate finger movements. The melody is sung or played to this accompaniment. Beginning with block chords on the strong beat, the accompaniment can undergo rhythmic variation within the measure and then by a rearrangement of the notes of the chords involved, a melodic-type of accompaniment can develop. Mathematically, this latter development offers numerous possible melodic accompaniments, and this provides children with experiences for analyses and the making of choices. Sensitivity to phrase structure and its meaning is increased through an awareness of harmonic patterns.

Since the learnings involved are aural, visual, and tactual in nature, it is recommended that early experiences be limited to songs in one key and that sufficient time be allocated for the establishment of chord progressions.

The procedure for left- and right-hand accompaniments begins with adding to the original right-hand block chords the root of the chord in the left hand. Notating this provides opportunities for learning the bass clef. Rhythmic variations and the addition of passing notes provide further interest and learnings. "Whether or not the taste of the teacher lies in msuical areas far removed from those of his pupils, it is his duty to relive, and take pleasure in musical experiences and associations in the less mature level of his formative years." (P. 71)

The commercial "schools of music" which have sprung up, feature instruction on chording-type instruments in response to the public demand. Thus, the proposed extension of harmonic learnings, particularly simple piano skills, would contribute to school-home relationships in distinct and lasting benefits.

Piano playing activities can be correlated with singing activities by having the children sing the piano chord patterns as vocal accompaniments on neutral syllables or words of the text. Changed voices can sing the foundation part.

An analysis of the harmonic structure of a selection reveals the unifying and contrasting elements of its form. A recognition, by children, of the binding quality of the chord sounding in a measure facilitates sight-reading and aids in the realization of phrase and sentence structure.

Chapter Five gives primary consideration to the extension of score concepts. Numerous examples are given to show how to organize and to present scores in a sequential order. Consideration is given to such factors as the elements of rhythm, melody, and harmony; the performing media; and the level of the children's skills, abilities, and interests.

The use of score-type arrangements is highly recommended for use in the elementary school classes because of their appeal to the varied interests of children, the accommodation of a wide range of skills and abilities of children, the availability of instrumental aids. Their performance provides a more satisfying experience in the fulfillment of implied harmonies and rhythms which more nearly approximate what they hear via the mass media outside of school; they also provide for the formation of small group performing units. There are available extensive melodic materials which can be converted into scores. The construction and the use of score-type notation provides far more extensive and meaningful theoretical aspects than those associated with melodic lines alone.

Comments

It is important to take note that the above proposal was submitted in 1955. In general, the practices of textbook publishers and of teachers are still far behind this proposal. However, some of the recent music textbook editions are now including more opportunities for rhythmic experiences such as described by Slind. Many more songs have the chordal structure notated and notations and suggestions for the utilization of instruments are included. Scores, too, are making an appearance, and some of the series include definite suggestions for keyboard experiences.

Throughout this proposal the author presents numerous and clear examples to illustrate his ideas and to present a sequence for planned learning experiences. Many of the examples are taken from two of his own publications.[6, 7]

One wonders as to what the author's program of proposals would be for the kindergarten and grades. Apparently the limitations regarding the grade levels to which this proposal applies forced the author to suggest that the proposed program of rhythmic learnings and activities are for grades three and four. Surely he did not intend to restrict this to these grades since many of the activities are appropriate to the lower grade levels.

Many aspects of this proposal suggest possibilities for research. Will an approach through rhythmic activities facilitate learning to read the rhythmic value of notes and aid in all note reading? Will the playing of simple melody instruments aid in developing note reading ability? Will this approach do this more effectively than the singing approach? Will the program of activities make it easier for children to apprehend form? The many learnings that are presumed to accrue from the prescribed program need to undergo testing in classroom situations under control conditions.

It appears to this writer that this proposal has implications for teacher-training institutions. If the proposal has validity in that it extends and facilitates musical learnings, then future classroom teachers in self-contained classrooms and future music teachers need to be taught the technics and the procedures for planning and directing the proposed experiences. Supervisors and music teachers now in service can profit from a careful study of this proposal in its original form by gleaning the many excellent suggestions. Certainly the author should be complimented for a proposal which has been very clearly and carefully written and supported by available knowledge. If the learnings which are to take place in a music class are dependent upon the diversity of activities as proposed in the five-fold plan of singing, playing, rhythmic movement, creating, and listening, then the author has presented a program which emphasizes the integration of these activities.

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5. Peter W. Dykema and Hannah M. Cundiff, School Music Handbook, Boston: C. C. Birchard and Co., 1955, pp. 41-42.

6. L. H. Slind, Melody, Rhythm, and Harmony for the Elementary Grades, Teacher's Manual (New York: Mills Music Co., 1953).

7. L. H. Slind, More Melody, Rhythm and Harmony, (New York: Mills Music Company, in print).

Smith, Jerry Neil. Arranging for the Modern Marching Band. Reviewed by Newell H. Long. University of Rochester, Eastman School of Music, 1963.

Although this treatise is disappointing as a guide to scoring for marching bands, it contains a thorough explanation of the harmonic vocabulary of popular commercial music and show tunes. Eighty-six pages are devoted to harmony, especially elaboration of chords, while problems of scoring, such as the distribution of melody and harmony parts to the various instruments of the marching band, are given minimal exposition and illustration. The Broadway and Hollywood methods of enriching and thickening harmony through added sixths, added ninths, and various seventh chords, clearly explained and well illustrated by Mr. Smith, effectively supplement the band director's knowledge of elementary music theory.

However, this expanded, lush harmonic vocabulary, seldom taught in college theory classes, will be more useful to the high school band director in arranging for his stage band, where only one player is assigned to a part, than in scoring for his large marching band. Smith states, "The simplest harmonies can be the most practical for the band as it marches" (page 111) and "for scoring to be used on the march..., it is better to err on the side of harmonic simplicity than on the side of complexity," (page 78). This suggests that much of his extended explanation of the dense dance-band harmonic idiom must be ignored unless one is arranging a number to be played in a standing, non-marching position. The treatise suffers from this conflict of purpose.

Although the well-organized and illustrated sections on harmony constitute a lucid explanation of practical ways to arrange chord tones vertically in modern dance-band style, the author tends to lean too heavily on a few pet solutions, e.g., he overworks the diminished seventh chord, recommending it to harmonize passing tones, neighboring tones, changing tones, and appoggiatures.

The dissertation falls short in the following respects:

1. The reporting of related literature is limited almost entirely to justification of the marching band.

2. Not included in the bibliography are numerous excellent articles on arranging for marching bands that have appeared in The Instrumentalist and School Musician.

3. Smith recommends a creative approach to scoring, and the tailoring of arrangements to fit the capabilities of each band, but he suggests and illustrates so few possibilities, only five in fact, and leaves uncharted the numerous alternatives.

4. No evidence is presented as to the out-door effectiveness of any of the scoring procedures recommended.

5. The brief examples of scoring are in condensed score and do not give a clear picture of the distribution of parts to various instruments.

6. Coverage of writing for marching percussion is not only inadequate, one paragraph, but ill-conceived: "...the drums may either be given a trumpet (melody) part to play or instructed orally to play standard rhythmic figures. An elaborate drum part is neither necessary nor practical, for drummers cannot easily read music on the march. Bass drummers are

> usually instructed to play on every strong beat and snare drummers follow the rhythm of the melodic line or play rhythmic background figures, such as afterbeats..." (page 114)

7. The rhythmic drive of contrapuntal treatment is ignored.

In spite of these shortcomings, Arranging for the Modern Marching Band is a valuable resource for teachers of music theory and orchestration and their students who may be interested in harmonizing arrangements in thick, "big band" style, whether for marching bands, concert bands, or stage bands.

Spohn, Charles L., Jr. An Exploration in the Use of Recorded Teaching Material to Develop Aural Comprehension in College Music Classes. Ohio State University, 1959.

Reviewed by Charles C. Taylor

College fundamentals of music classes have been traditionally a part of the required preparation of music students. This study was undertaken on the premise that aural comprehension can be developed more effectively by the use of recorded teaching material than without it. Eight tape-recorded listening lessons were prepared to be presented to an experimental class of 22 students for an eight-week period for individual listening. Concurrently, 19 additional students were developing their skills of aural comprehension by conventional methods in a class situation. An evaluation of the two teaching procedures is made on the basis of scores received on a test given to both groups of students before and after the eight-week teaching period.

Six definitions of the fundamentals of music are presented by well-known authors in the field of teaching music (Raymond S. Elliot, Glen Haydon, George A. Wedge, Vincent Jones, Howard A. Murphy and James Mursell). Among these six definitions there are noticeable differences of opinion. These differences arise principally in describing the manner in which the information is to be taught. There is, however, agreement among the six authors on the two essential parts of the fundamentals of music. They are (1) the technical knowledge (sometimes called rudiments) and (2) the need for the development of skills.

The development of skills as a part of the fundamentals of music includes three specific techniques: (1) the manual skill of notation, (2) the visual perception of notation, and (3) the aural comprehension of notation. This study is concerned with development of the third skill.

The Use of the Tape Recorder as a Teaching Aid

Studies quoted using the tape recorder as a teaching aid vary from uses in developing oral reading, foreign language instruction, varied kinds of subject matter, to aural comprehension.

At Northwestern University during the summer session of 1949, Frank B. Cookson[1] conducted a study devoted to developing aural comprehension by the use of tape recordings. He made use of tapes for the following reasons:

> To teach ear training it seems imperative that the student learn patterns of many kinds which he can apply to the fabric of music. In our own work in previous years such patterns have been presented in class, and the majority of the classtime (and therefore the instructor's

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[1] Cookson, Frank B. Recordings and Self Tutoring. Cleveland: The Brush Development Co. 1949.

> time) has been devoted to seeing that the students learn, practice, and apply the patterns."

The most recent use of recorded music for the specific purpose of developing aural comprehension has been done by the music department of Rutgers University. This music dictation series (on discs) is entitled "A Course in Basic Musicianship and Ear Training."

The faith and interest that has been indicated in the use of recorded sound as a way of increasing aural comprehension is encouraging. Because of the interest that has been shown in developing the aural skills of music students in this manner, there is a need to investigate more thoroughly the aural development of the student.

The results of aural research by Otto Ortman[2] were significant to the development of aural comprehension. The research showed that (1) ear dictation is possible for most people; (2) more expedient methods of teaching aural comprehension can be used and (3) age is not a factor in the development of aural comprehension.

Description of the Experiment

The purpose of the experiment was to develop a better teaching technique for students pursuing the study of the fundamentals of music--particularly that portion of study devoted to the development of aural comprehension.

The procedure of the experiment was as follows: two groups of music students, divided equally by ability and background were used as subjects. The bases for determining the ability and background of the students were test scores received on the Ohio State Psychological Examination, music entrance tests, applied instrumental areas, and sex. Both groups of students were taught by the same classroom instructor. In the control class, aural development was taught by normal classroom procedures (e.g., the teacher played melodic and rhythmic exercises on the piano; the class sang melodies at sight; and assignments were made to notate familiar songs). The second class, the experimental class, used specially prepared tape recordings for aural practice outside of class.

New tape recorders were used for the experiment. The author was surprised to discover that all students had some experience in operating either a tape recorder or a motion picture projector, which is very similar in operation. Therefore, the operation of the listening equipment was not a real problem.

Because all students had to be able to notate the first melodic dictation before more difficult material could be presented, it was agreed that the listening project would start during the fourth week of the quarter. This arrangement gave the students time to learn notational skills for the aural-written work.

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[2] Ortman, Otto. "Problems in the Elements of Ear Dictation," Research Studies in Music, Baltimore, Md., Peabody Conservatory of Music, October, 1934.

The criteria level was established as that material contained in the melodic dictation at the end of chapter 6 of the text.[3] The level of achievement for each listening lesson was established at 100 percent. The first hearing of each tape by the experimental class was during class time. If a student scored 100 percent on the first hearing, he did not drill on this lesson outside of class time.

The development and building of exercises from the material at the end of Chapter 6 in the text was a considerable problem. In the past several years there has been an increasing resistance to exercises for the sake of exercises, and a belief that material is best learned in context. Even so, for the purpose of this project, the material could best be presented and analyzed if the information was imparted through drills that were developed for this purpose, rather than through melodies that would be much more complex and less to the point. Each melody was contrived to represent only one melodic interval problem. The author believed that the scale line is most easily recognized and notated, and that any break in the scale line is a problem of interval recognition and, therefore, something that must be learned. Second, there was the necessity for different rhythm patterns to be added to these interval relationships in such a way that it might seem as though they were new melodies or separate entities each time. From an analysis of the intervals and rhythmic problems, a series of seven listening lessons were prepared, plus an additional tape which was to serve as the pretest and posttest of the project.

The optimum time of one tape should be not longer than 20 minutes. Each exercise would be played on the piano three times. The students would be asked to write at each playing.

The author was both recording technician and performer on the tapes. Therefore it may be assumed that the tapes that were manufactured on this basis were not of the highest quality. It was felt, however, that the tapes were of good enough quality to achieve the purposes desired.

The problem of student motivation was anticipated, but the solution in its entirety could not be realized without knowing the personalities involved and the continuing reaction to the work. As the project continued, motivation for the experimental class was through the continual stressing of excellence in their work, apart from any relations to any other class or comparison with any other group.

As a pretest, six melodies were chosen as representative of the musical complexity which students were required to master at the end of the quarter (end of Chapter 6 of the text). All melodies were recorded in one key on this tape, since a different tonal center for each melody would have complicated the listening. An evaluation of the scores on this pretest showed the control and experimental groups to be, for all practical purposes, equal. (Note: although this statement is made, charts and graphs included in the study show that the experimental group scored better on the "rhythm" aspect of the pretest than did the control group.)

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[3] Elliot, Raymond S. The Fundamentals of Music. New York: Prentice-Hall, 1955.

The difference between the relative difficulty of the pretest and the first exercise was considerable. The first listening lesson was designed to include only melodic problems found by analysis of the melodies that were used as the goal for the classes. As a result, the exercise was designed to avoid as nearly as possible any rhythmic problems. Each tone was recorded as a whole note. Each melody or tone group began on F^1. The starting note was given for each exercise on the printed answer sheet. Any interval skips were always made on the second note, between the first and second note, or between penultimate and final tone. The remainder of the tone group was scaler. At the tempo of the playing, the students could write the note either within the writing time allowed (ten seconds), or as the exercise was played.

Rhythm was the factor on the second listening lesson, with rhythmic patterns played on a single pitch, in various combinations of half, quarter and eighth notes.

The third and subsequent listening lessons were a combination of the melodic and rhythmic problems. Scores for the experimental class are:

Listening lesson	Problem	Perfect scores achieved at hearing number						Total students
		1	2	3	4	5	6	
1	Melody	9	6	5	2	0	0	22
2	Rhythm	3	4	12	2	0	1	22
3	Both Mel. & Rhy.	15	5	1	0	1	0	22
4	" " " "	10	9	3	0	0	0	22
5	" " " "	16	5	1	0	0	0	22
6	" " " "	12	8	2	0	0	0	22
7	" " " "	15	6	1	0	0	0	22

An interesting observation is that students needed fewer hearings toward the end of the project than were needed in the earlier exercises, even though the rhythm patterns in the later lessons were more difficult.

Evaluation of the Experiment

Upon the completion of the experimental listening lessons, both groups were given the same tape that had been used to obtain the pretest score. The score obtained from this second hearing was used as a comparative score for the evaluation of the study.

After comparing all tables for the posttest scores, there are visible signs of differences in the aural comprehension of the two classes. The overall improvement of the control class does not seem to be as great; but more striking is the separation of the melodic and rhythmic errors. There is an indication that rhythmic identification of the control group improved a little more than the melodic recognition. With the experimental group the overall improvement was greater. At the same time, melody and rhythm recognition improved equally.

A statistical analysis was carried out on the percentage decrease in the number of errors scored in the pretest and posttest. The average percentage decrease in number of errors on rhythm in the control group was

57 percent, while the decrease in the experimental group was 80 percent. Also on melody the experimental group showed a significantly greater decrease in the number of errors than did the control group.

Recommendations Based on the Findings of This Study

1. An extensive tape teaching program, with additional equipment to be obtained for an extended listening program in aural development at the Ohio State University School of Music.

2. An experiment using only melodies from the literature.

3. The aural comprehension of harmonies.

4. An evaluation of the experiment over a longer period.

5. Aural comprehension and applied music. There might be a supporting correlation between these two activities.

6. Extended use of different instruments for recording the practice tapes. It might be possible to record aural study material performed by band, orchestra, and chorus so that a "true-to-life experience" would be afforded. It is the premise of the author that the closer real-life situations are presented in the student's learning experience, the more effective that learning experience will be.

Comments

The author of this study and his guiding committee of faculty members are to be commended for the design of the study and the controls used to delimit the study: the care used in selecting students for the experimental and control groups; the use of pretest and posttest from the desired level of achievement, related to other aspects of the music theory class; the use of the same classroom teacher for both experimental and control groups; the comparison of the test results of the experimental and control groups which gave a basis for the conclusions reached, i.e., that the experimental group improved markedly over the control group in the skill being tested.

A problem in this study is that of immediate reinforcement (i.e., right or wrong) to the learner at the conclusion of each item in the drill material. This is recognized as a weakness by the author, and efforts are made to correct this in subsequent projects.

This experiment makes use of the linear pattern in machine teaching, as do many others undertaken recently, particularly those making use of the tape recorder. From the standpoint of technique, an interesting project using the branching pattern and providing immediate reinforcement to the learner through the flexibility of a 100-channel random access tape recorder and associated slide projectors is now under way at Southern Illinois University by William Wakeland.

One question, perhaps irrelevant which occurred to the reviewer was this: Since the experimental class heard only one playing of the taped drill material in class, as against the presentation of the drill material by "conventional methods" to the control class, what happened to the class time "saved" by the experimental group? This is a phenomenon of our century with its laborsaving, timesaving technical development.

A significant contribution of this project, through its recommendations, is that it has served as the starting point for a series of experimental projects in the teaching of various aspects of music theory at the Ohio State University. It certainly was not placed on the library shelf when the doctorate was granted.

Poland[4] in his doctoral dissertation continued this examination, and Spohn and Poland are engaged in further studies, continuing at the present time. Research is now being conducted under a Title VII grant of the National Defense Education Act. This project is a study of the development of music-reading and aural-comprehension skills through the use of various self-presentation materials. These modes of presentation are:

1. Taped material programed with aural stimuli and written responses.

2. Material presented with visual stimuli and recorded voice responses.

3. Taped material programed with aural stimuli and recorded voice responses.

4. Material presented with visual stimuli and written responses.

The main hypothesis in the study is that the skills of music reading and comprehension can be learned equally well by all four modes of presentation.

The project is being conducted in an Audio-Visual Training Laboratory, basically a language laboratory with equipment modified for aural presentation of music. Use is being made of the Tachitron (a personal Tachistoscope) to present music visually in a controlled environment; dual channel tape recorders adopted for the student to sight sing intervals and compare them with a model for immediate reinforcement; the Conn Dynalevel for the visual presentation of various elements of music; the Conn Strobotuner for students to learn more about the accuracy of their singing.

All of these experiments are designed to discover how effectively various methods of machine teaching can aid in the development of elements of musicianship at the college freshman-sophomore level. The results of these experiments should demonstrate the practicality of the use of machine teaching in a more general manner in the training of music students.

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[4] Poland, Bernard William. An Investigation of Some Aural and Notational Elements in Music Theory. Doctoral dissertation. The Ohio State University, 1960.

Stokes, Charles F. An Experimental Study of Tachistoscope Training in Reading Music. Teachers College, University of Cincinnati, 1944.

Reviewed by William F. Wakeland

There are a number of intriguing aspects of this study completed by Stokes over 20 years ago. It came at a time when efficiency of learning was a national concern to the military, and the use of mechanical devices to aid learning was just beginning to draw public attention. The study used a tachistoscope, which was heralded at the time as an aid in developing span of recognition for such things as enemy aircraft spotting and language reading improvement. Interest in the parallels between reading language and reading music reached a new high about this time, and any device that claimed success in one area held some import for the other. The fact that Stokes used secondary school-age students for this study places it among the very few of its kind in music education.

Subjects

The subjects used were 316 students (158 matched pairs) from one Cincinnati school. Seventy-two students were high school instrumentalists who were all taking some form of private lessons in addition to participation in school performing groups. The remainder were seventh- and eighth-grade general music students, none of whom were taking private lessons. The seventh- and eighth-grade students used were individually matched for scores on the Knuth Achievement Tests in Music within each class. Since class assignments had originally been made on the basis of sex and intelligence, some matching on this basis resulted. The high school instrumentalists were matched for scores on the Knuth test and also for performing instrument. Random selection determined an experimental and a control member from each matched pair.

Experimental Treatment

The study was designed to test the apparent effectiveness of a drill program which was designed by the investigator and given to the experimental group. The only variable in the treatment was the drill program, for all students carried on the regular classroom activities in music. The experimental drill program consisted of 21 ten-minute lessons administered at the rate of one per week. Each lesson consisted of 40 slides of melodic material printed as half notes. Each slide was flashed on a screen before the students by a tachistoscopic device attached to a slide projector which allowed an exposure of the music for one-tenth of a second. The drill program was designed to increase span of recognition by becoming increasingly more difficult as the lessons progressed. The horizontal span was increased from examples using two notes to those using seven; the vertical span was increased from examples using intervals of a unison to those using a ninth.

Student response for the first five lessons consisted for the seventh and eighth graders in the experimental group of selecting, in multiple-choice fashion, an identically printed musical example of the one seen on the screen. The high school students copied the examples during these first five lessons.

Starting with the sixth lesson the student response pattern was changed. After a slide had been exposed for the one-tenth of a second, a piano performance followed. The student responded by indicating on a score sheet whether the example heard was the same or different from the example seen. The notes were performed at a tempo of 45 half notes per minute.

Collection of Data

Data were compiled for three main considerations of achievement as a result of the drill lessons. The first was that of improvement in span of recognition. One approach to this consideration was to compare scores attained by the students during the drill lessons on the score sheets. In addition to this, items on the slides were classified according to apparent difficulty, and then an analysis was made of the improvement of scores for various classifications of difficulty. Still a third comparison was made in span of recognition scores by giving the twentieth lesson as a pretest to the experimental group between lessons five and six. (The mode of response was changed after lesson five.)

To determine whether the special training had improved music reading, equivalent forms of the Knuth Achievement Tests in Music were given as a pretest and a posttest to both the experimental and control groups. A "t" test was used to determine whether the differences between the pretest and posttest scores of each group could be attributed to chance. Then the difference between the posttest scores for both groups was studied to determine a level of significance. Students had been matched on the basis of the pretest scores on the test.

The final measure of achievement which was considered was a study of the individual performances of the 36 matched pairs of high school instrumentalists. The students were given a two-week notice that they were to play an ascending and descending scale of their choice as rapidly and as accurately on their instrument as possible. This performance was recorded and scored for the number of correct notes performed per second. This figure was used as a measure of the technical skill of the student.

A second part of the performance pretest involved the sight-reading of a passage containing only sixteenth notes. The recorded performance was scored as to the number of correct notes played per second. This figure was used as a measure of the sight-reading skill of the student.

The measure of sight-reading skill was then divided by the measure of technical skill. The resulting ratio was declared to be a usable indication of the difference between the technical ability to perform and the sight-reading ability of each student.

This same testing process was repeated after the drill lessons were completed. Stokes used a different sight-reading passage that was judged to be equivalent to the first. An increase in the figure resulting from the rate of sight-reading skill divided by the rate of technical skill was believed to indicate that the student had improved in the direction hoped for by the investigator. These calculations were believed necessary because of the problem of comparing sight-reading ability of students who were not at the same level of technical performance and because of the differences among instruments in ease of rapid performance.

Results and Conclusions

The results of the comparison of scores from the drill lessons was complicated by the fact that the material became more difficult as the lessons progressed. The mean scores achieved by the students on the drill lessons fell slightly as the lessons progressed and then rose some toward the last lessons. Stokes interpreted this to mean that the group was improving because the material was increasingly more difficult while mean scores were staying rather constant.

A comparison of the scores made on lesson 20 when it was given as a pretest and then as a final lesson revealed scores that the investigator considered to be "markedly higher."

The item analysis which traced the scores attained for some items classified as similar in difficulty showed a "gradual improvement" from lesson to lesson.

On the grounds of these three considerations, the investigator concluded that there was "convincing evidence" that the students in the experimental group had improved their ability to connect a visual pattern of musical notes with an auditory pattern and to say whether or not the two were identical.

The results of the pretest and posttest scores on the Knuth test, which were compared in several ways, revealed that both the experimental and control group had made a slight gain. There was no significant difference between the two groups, which led the investigator to conclude that the drill lessons had not contributed to the music reading ability of the experimental group as measured by the Knuth test. The gain was attributable to general music instruction, maturity, and test-practice effect.

The results of the individual performance test of the high school instrumentalist revealed a slight edge in favor of the control group at the end of the experiment. The gain for either group was not calculated to be statistically significant. The investigator's conclusion was that the drill lessons had made no significant contribution to the sight-reading performance of the students involved in the experimental group.

Comments

To state an exceptionally complex process in a language of a few simple steps, there was a three-part operation in the task that Stokes asked of his students in the drill lessons. The first included the grasping of a pattern of musical notes and holding it in mind after it had vanished from sight. The second operation was to establish a visual image of a pattern heard in performance, which required changing an auditory stimulus into a visual symbolic system. The third was to compare these two patterns and judge them as similar or different. The definition of span of recognition, as used by Stokes included all of these steps.

If the Knuth test measures ability in any of these operations--and it is generally believed to do so at least a modest degree--it might be that of these last two operations. Certainly it is not the first operation; the students have every opportunity to stare at the printed pattern while taking the Knuth test. The fact that visual span is not measured may be one of the reasons that group tests of this sort are notoriously low in relation to various types of actual performance.

Unfortunately for the outcome of the study, the one operation which had some possibility of improvement through the drill lessons was that of increasing visual span, an aspect relatively unimportant to the criteria measure of achievement in music reading--the Knuth test. There is general belief today that one-tenth of a second is much too slow for such a procedure, however.

There was little possibility that skill in learning to judge musical direction and distance could be improved by the drill lessons, because the students had no knowledge of the appropriateness of their responses--no method of differentiating between correct and incorrect.

It would have been a magical method indeed which would have shown significant improvement in sight-reading performance with so little practice spread over so long a period of time. It is not surprising, when we take into consideration the high degree of specificity of musical skill as it relates to practice, that listening to a piano play half notes at a rate of 45 notes a minute while one was trying to remember the relationships among notes previously seen, did not improve sight-reading.

The questions left unanswered as to the use of the measure of sight-reading skill related to technical skill include serious doubts about the reliability of the two measures involved. There was little assurance, for example, that the students were actually playing to the top of their technical ability in the case of the scalewise passage. The fact that the sight-reading material was not scalewise eliminated the possibility of equating these two tasks as being of equal difficulty.

With the present interest in new media in teaching and a very scanty amount of existing research in this area, it becomes increasingly clear that the magnitude of importance of the work of Stokes in this study lies in the great assistance which he gave to those who followed in planning research of a similar nature. A debt for his work is owed to Stokes by many; reference to this study has occurred and will continue to occur many, many times.

Swanson, John Frederick. Voice Mutation in the Adolescent Male: An Experiment in Guiding the Voice Development of Adolescent Boys in General Music Classes. **University of Wisconsin, 1959**

Reviewed by Roger P. Phelps

It is gratifying to find a study of this caliber in the rather controversial area of vocal music for adolescent boys. The research findings not only are refreshing but also can be a cause for rejoicing on the part of those who have an "adolescent boy" music problem.

Introduction

With evidence that junior high school boys were not as active in musical activities as girls, Dr. Swanson conducted an experimental study with two groups of eighth grade boys in Moline, Illinois. At hand for the author were data showing the overall ratio of two boys to seven girls enrolled for choral activities in representative secondary schools in Wisconsin, Illinois, and Iowa. Among the notions with which Swanson was confronted were: (1) Boys are not as musical as girls, (2) people generally look with disfavor on boys who take part in musical activities, and (3) boys are too busy for singing. In refutation of these unfounded assumptions he revealed that juke box and disc jockey listings of performers showed a ratio of men to women of 4:1. In addition, he noted that concert listings in Musical America and the rosters of symphony orchestra personnel show a definite edge for men over women.

The Problem

In conducting his experimental study the author had three purposes in mind: (1) To determine whether or not there are any factors involved in the phenomenon of voice mutation that might affect the learning outcome in vocal music classes, (2) to ascertain whether or not there is a methodology which will better meet the needs of adolescent boys in music classes during the period of voice mutation, and (3) to determine whether or not this methodology could result in improved acquisition of skills, knowledge, and attitudes. Subjects for the study represented a relatively homogeneous group of eighth-grade boys with the same cultural and economic backgrounds. In addition, the author states (page 21) that "almost all of them came from the elementary schools of that city with the same co-ordinated system of music instruction in the preceding seven grades." The experimental group consisted of 87 boys enrolled at John Deere Junior High School and the control group contained 100 boys from Calvin Coolidge Junior High School (both in Moline, Illinois). In both groups music was scheduled for 50 minutes twice a week during the nine months of the experiment. Individual conferences, periodic voice checks, and other activities required additional time.

Procedure and Findings

Entitled "The Phenomenon of Voice Mutation," the second chapter was concerned with somatic and eunuchoid aspects of the adolescent male voice. Swanson found that certain patterns of change in range and control of pitch occur with enough frequency that singing activities can be adapted to them. In his preliminary case studies with the experimental group he measured height, weight, pubic hair rating, and chronological age in months showing voice range. Using a measurement based on the Davenport Scale, Swanson noted (page 39) that "bass tones" of the emerging voice tend to appear when the boy is in stage three (out of a possible six stages) in the development of pubic hair. He also revealed that the boy retained control of his "treble voice" for a considerable time after the bass voice had begun to function, and that the lower part of the bass voice was functional before the upper. The control group was taught by the same methods as in previous years.

The third chapter was devoted to "Developing a Methodology of Vocal Production to Apply to Adolescent Males" and the fourth was concerned with "Setting up the Experimental Situation." In the experimental group periodic voice checks were run of all boys and individual case studies were supplemented by tape recordings of each boy's singing. A test of musical attitudes and a musical knowledge questionnaire, both constructed by the author, also were given to the experimental group. The voice test measured the number of tones included in: (1) The changed or adult voice, (2) falsetto or boy's voice, (3) overlapping of falsetto and changed voice, and sought to determine which tones could not be produced by any means. Objectives of the attitude test (page 88) were to measure "a desire to produce music for its own sake (vocal or instrumental) plus a sense of pleasure in the producing," and "a desire to listen to music, accompanied by pleasure in the listening."

Six-week phases, corresponding to report card marking periods, were utilized for the experimental group. Swanson discusses these in Chapter V, entitled "The Methodology of Guiding the Vocal Development of the Experimental Group." Included were: (1) motivation, (2) singing activities (both vocalises and songs), (3) music reading activities, (4) creative activities, (5) listening activities, (6) providing for individual differences, and (7) classroom organization and control. Interestingly enough, Swanson reported (page 108) that the singing of songs "turned out to be by far the major activity of these classes. This was an unexpected development, for it had been the consensus of nearly all the various junior high school vocal music teachers in Moline for the past twelve years that it was not possible to sustain a high level of interest if only singing activities went on for a fifty-minute period. The boys in these experimental classes demonstrated a consistently high degree of interest and effort as they sang. It was not unusual for a complete class period to be devoted entirely to singing activities." Conversely, note reading, "as a part of musical activity... aroused little enthusiasm or effort in the boys." Another interesting finding was revealed on page 109 in these words: "Formal listening periods met with little favorable response in these classes." Similar results were evident for creative activities. Supplementary activities, all voluntary, consisted of solo singing, improving individual records (each boy kept a personal record of his vocal skills), small ensemble performance (a boy singing his voice part against any challenger from another part), and public performance. Classroom control was maintained through a rigid routine (assigned seats, monitors passing out materials, etc.) and Swanson reports little resistance to it. On the contrary, he reveals that unsolicited remarks from the boys indicated that they "enjoyed this procedure" (page 124). In concluding the chapter the author, in a convincing and satisfying manner, states that the boys were more interested in producing music themselves than in listening to it.

The sixth chapter, "Evaluation of Results," is concerned with a comparison, in tabular form, of differences between the experimental and the control groups at the end of the experiment. A very definite advantage was noted for the experimental over the control group.. Some typical examples follow. In the control group, 63 percent of the boys added no bass tones, but in the experimental group the percentage was only 32. An average of ten semi-tones in the bass range were added by 63 percent of the boys in the experimental group whereas only 5 percent of the control group were able to add an average of five semi-tones. No treble range was evident in 25 percent of the control group, but only 3.6 percent of the experimental group had none. Only one boy in the experimental group lost tones during the year (three semi-tones) while six percent of the control group lost an average of almost seven semi-tones. In the experimental group, the final results indicated that the group not only had better attitudes toward music, but also the participation differential between girls and boys dropped significantly.

Implications

Since a summary appeared at the end of each chapter, Swanson appropriately concerned himself in the final chapter largely with implications of his study for further research. Among the most significant are: (1) Using the first few months of rapid change as a basis, the possibility of a prediction whether a boy ultimately will become a tenor, baritone, or bass; (2) since the anatomy of the vocal apparatus is not clearly understood, especially as involved in producing musical tones, it is often difficult to explain the patterns that appear in studies like this one; (3) the exploitation of the head tones involves so many facets of vocal production that much more investigation of its possibilities and limitations is needed; (4) revision of thinking about singing ranges appropriate for voices in the earlier stages of mutation suggests the need for a new repertoire of songs for young adolescent male singers; and (5) the extension of this study to adult males suggests fascinating results could be obtained with men who have avoided singing activities because of feelings of deficiency or lack of vocal control.

Comments

This excellent study demonstrates a thorough understanding of research techniques and their application. The author is to be commended for the precise manner in which the various phases of the research were carried out. Especially significant is the account of his work with the experimental group in which the boys learned skills, developed confidence, and exuberated a desire to participate in vocal music.

As evidenced by his extensive list of implications, the author realizes that much more remains to be done in the area of the adolescent boy's voice. With this experience behind him as a basis, it is to be hoped that Dr. Swanson will find it feasible to pursue further research in some of the areas he listed.

In the second chapter the author presents some data for one group of the experimental subjects collected at a time prior to the study proper. Whether or not this factor affected the results of the study was not clear to this reviewer.

A more meticulous proofreading of the final copy no doubt would have resulted in the elimination of several misspelled words, typographical errors, strikeovers, and other errors. As examples of the former, "proturberance" (page 114); "producable" (Table 30); and "produceable" (page 185) should be mentioned. On page 213 the indication of 62" (instead of 62%) obviously was typographical. In the bibliography, underscoring--a device which normally signifies italics in a study of this type--was used for both published and unpublished materials. Fortunately these errors do not detract from the study, which is a most welcome addition to the knowledge about voice mutation in the adolescent boy.

THE WIND ENSEMBLE AND ITS MUSIC DURING THE FRENCH REVOLUTION (1789-1795)* Michigan State University, 1966

David Paul Swanzy

Reviewed by Edgar M. Turrentine

In his introduction to Waits--Wind Band--Horn, three monographs reprinted under separate cover from Hinrichsen's Seventh Yearbook, Max Hinrichsen writes: "It is remarkable that writers on the development of music and musical activities almost invariably neglect a very important branch of musical history, the evolution of wind bands." It is not so much that this "important branch of musical history" is neglected, but, it is remarkable that the results of historians' investigations are not known amongst the greater number of the rank-and-file bandsmen. It is possible for interested bandsmen to develop a bibliography of investigations dating back almost to the beginning of the nineteenth century.

Swanzy's report of his investigation of The Wind Ensemble and its Music during the French Revolution (1789-1795) is another recent contribution to this bibliography. He hypothesized that the period spanning the six years of the French Revolution produced an artistically significant repertoire of band music suitable for programming consideration by contemporary groups. (That four of the ten compositions he examined in some detail were already available in practical editions was evidently irrelevant to his purposes.) At the conclusion of his investigation he accepted the hypothesis.

The report of this investigation is organized in the common five-chapter format. Such mechanical errors as an occasional use of the personal pronoun, a split infinitive or two, and an incorrect use of op. cit. are of minimal concern. However, of more concern to the serious reader, is the lack of source citation for the twelve musical examples in the main body of the text.

Kappey, Farmer, Goldman, and Fennell have written more-or-less at length on the history of the band. How great a contribution is appreciated only when one studies the footnotes of the master's theses and doctoral dissertations which have been written on wind instruments. Swanzy has drawn on these secondary sources and other readily available secondary sources for his chapter on the "Origin and Development of the Wind Ensemble preceding the French Revolution." In fact, it could be said that the chapter reflects an English-American bias if the number of footnotes of the English and American sources are compared with the number of non-English and American sources--at that, the non-English and American sources were written originally in English or Translated into English. (A highly respected musicologist once said that "language is no barrier to the musicologist.") When the statement is made that a "paper presents more related material on the subject until 1795 than any known specialized work yet published," the reader assumes that, necessarily, primary sources have been consulted.

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*Order number 66-8495, film $3.85, xerox $13.50.

One need not go beyond such secondary sources as archaeological reports, art historians' reports, and classicists' reports (which would lead one to such primary sources as archaeological artifacts, inconographic records, and the writings of Classic Antiquity) to learn that the ancient Egyptians, Greeks, and Romans had very well organized corps of wind musicians. For example, at least one secondary source, Yadin's study and interpretation of the section of the Dead Sea Scrolls which deals with the use of trumpets in the War Between the Sons of Lightness and the Sons of Darkness, refutes such a statement as, "Although standard musical and rhythmical signals by trumpet and drum were practically unknown before the fifteenth century, they often sounded to convey an order by some arbitrary predetermined signal." Such a primary source, available in almost all university libraries, as Pausanias also points to a sophisticated use of "bands" of musical instruments in his statement that "the Lacedaemonians used to go out to fight, not to the sound of the trumpet, but to the music of the flute and accompaniment of lyre and harp." Iconographic evidence, probably brought to modern attention since Sachs' investigation, but not since Marcuse's investigation, shows a sophisticated use of the trumpet in Egypt as early as 2423 B.C.--a full millenium before Sachs and Marcuse credit its appearance. Primary sources such as the Patent Rolls, Calendars of State Papers, Calendars of Domestic Papers, Close Rolls, and so forth of the English kings should be examined for possible reinterpretation of pertinent information which contributes to the history of the band (reprints of such records are available in many of the libraries of universities engaged in advanced graduate instruction). Other primary sources such as the early treatises on the "art of warfare" contain information useful to the band historian. Histories of uniforms and costumes also contain information, especially with a sociological orientation. In other words, band historians must get out of the 780 section (Dewey system) of their libraries and venture into the 300, 800, 900, and other sections.

Swanzy's third chapter, "An Historical Survey of French Wind Music Written during the Revolution," draws heavily on the work of Constant Pierre and, to a lesser degree, Julien Tiersot--68 of the 123 footnotes in this chapter credit Pierre's B. Sarette et les origines du Conservatoirie. He has done an excellent job of summarizing this research. (It is hoped that his translations of Pierre's and Tiersot's reports will be published soon.) This "Historical Survey" documents the activities of "forty-five musicians, formerly of the French Guards, (which) became the nucleus of a group which in the next six years would develop into the Free Music School of the National Guard, the National Institute of Music, and finally the Conservatory of Music" and "the dominant figure in the organization of this outstanding music corps," Bernard Sarrette. In addition, Swanzy has alluded to the sociological implications of the role music served during the Revolution. (This suggests that a rigorous examination of the sociological role would be a worthy undertaking.) Again, the heavy reliance upon secondary sources for information is a hallmark of this chapter. At least, the official records of the City of Paris, which are available in reprint in many American university libraries (900 section), could have been consulted to verify the interpretations of the information Pierre and Tiersot found in these records. Information contained in footnotes is not always documented. In one instance the information does not agree with information found later in his text. This contradiction concerns Jean Xavier Lefevre: in a footnote in this third chapter "Lefevre is credited with the addition of the sixth key on the clarinet--the C# key" and in the body of the text in the fifth chapter, "Thanks to the efforts of Lefevre, the new mechanisms and technical possibilities of the instrument were common knowledge to the players as well as to the composers." Documenting such contradictions, if not resolving them, is always an interesting exercise for thesis and dissertation writers. (Cf. F. G. Rendall, The Clarinet and Cecil Forsyth, Orchestration, among others, for this particular contradiction.) Also, in mentioning contradictions, Marcuse, Sachs, and Schneider, besides Grove's, should be consulted concerning the origins of the nineteenth century zoomorphic buccin, as should Marcuse be consulted on the revival of the tuba corva. Sarrette, quoted by Pierre, quoted by Swanzy, seemingly has another version of the origins and revival of these two instruments. Appendix B contains representative parts for these instruments from compositions discussed in Chapter 4. However, in spite of this reviewer's "nit-picking," this third chapter is an important English language source of information on the activities of Bernard Sarrette and his forty-five musicians during the years, 1789-1795.

Chapter four of this report is titled, "An Analytical Study of Ten Representative Works of French Wind Music Written during the Revolution." These ten compositions, by five composers, are: Gossec, Symphonie Militaire and March Lugubre; L. Jadin, Symphonie and Ouverture; Catel, Ouverture and Marche Militaire; Mehul, Ouverture and Le Chant du Depart; and X. Lefevre, Marche Militaire and Pas de manoeuvre. Reductions, for piano, of nine of these ten works are found in Pierre's Musique des Fetes et Ceremonies de la Revolution Francaise. Also, four of these works were a available in modern practical editions at the time of Swanzy's investigations, as he notes. Swanzy obtained copies of the parts to each of these works from the Bibliotheque Nationale and constructed full scores since, with one exception, full scores were either unavailable or non-existent. These full scores comprise Appendix A. The analysis was of "melody and texture, harmony, rhythm, form, and timbre (use of instrument)." After analysis it was concluded that these compositions were not innovative when compared with works for other media of the time. However, the use of the buccin and the tuba corva was considered unusual; but, when one considers that this particular repertoire was used to contribute to the patriotic enthusuasm and fervor of the Parisians and the novelity of the zoomorphic instrument and close association of the other instrument with one of France's leading citizens, then their use might not be considered unusual. (one remembers that Julius Caesar, in his Gallic Wars, described a zoomorphic instrument as one popular with the Gauls and one which evidently was not common to the Romans, although the early Greeks know of this "Celtic carynx." Also, as Swanzy quotes Sarrette, "The tuba corva was a part of the ornaments of the ancient coach of Voltaire" and Marcuse says that the instrument was used in a musical group in 1791, "when Voltaire's remains were transferred from the Abbaye de Scellieres to the Pantheon.")

"Implications and Conclusions" of this study, Chapter V, support Swanzy's hypothesis that there is worthwhile repertoire of music originating from this period suitable for performance by modern bands. This music, conservative in the style of the time and reflecting the technological development of the instruments for which the music was scored, is primarily functional music. It is "outdoor music," designed to arouse the patriotic fervor and excitement of the listener and less to satisfy his aesthetic needs. Swanzy also pursues the argument, perhaps not as convincingly as he could, that the increased technical demands on the performer this music makes, as compared to other types of music of the period, contributed to the development of the band and to wind instrument performance. Finally, other aspects of the development of the band were suggested by the dissertation writer for investigation. To this list might be added another one--that this music, stemming from the first Paris Conservatory musicians, is also the beginning of a large repertoire of functional music ("contest pieces") which the Paris Conservatory has contributed to the wind instrument world.

It is commendable that bandsmen in the United States are beginning to take an interest in the historical antecedents of their chosen medium. It is also commendable that they are undertaking investigation of these antecedents. It must be remembered, however, that rigorous research technique, systematically employed, will obtain more conclusive results and contribute more to the knowledge of the band's development. Secondary sources may be new and informative to the investigator but paraphrasing them does not add to what is already known. Kappey, Farmer, Goldman, Fennell, _et al_. have interpreted original source material and their interpretations are readily available to any curious bandsman. A reinterpretation of their original source material may be in the category of original research but not the interpreting of their interpretations. The problem probably lies in whether a doctoral dissertation is an exercise in preparation for original research or actually original research. Since there are more bandsmen in the United States than in any other country, and since the majority of these bandsmen are not readers of the French language, a greater contribution would have been the reporting of the translations of the Pierre and Tiersot works along with a critical analysis, interpretation, and evaluation of their findings. However, in lieu of this approach, Swanzy's dissertation will provide this majority with more information about _The Wind Ensemble and its Music during the French Revolution_ (1789-1795) than has been available in the English language.

AN EXPERIMENTAL INVESTIGATION OF A MAXIMAL SPEED PACING TECHNIQUE FOR TEACHING MUSIC READING* Cornell University, 1964

Donald Albert Trisman

reviewed by ALAN H. DRAKE

INTRODUCTION

As the title indicates, this study was an investigation with a statistical plan designed "to determine the efficacy of a maximal speed pacing technique for group instruction in rhythmic reading." The experiment was predicated upon the thesis that in the reading of musical notation, the average person rarely is required to respond at his maximum speed. The average person manages to do the task when the required rate of response is low, but fails to read correctly when "a relatively large number of responses are required per unit of time." Therefore, if a subject could be trained to respond accurately to notational rhythms at an accelerated rate which would push him closer to his maximum capability, he would then become more adept at reading the notation at a normal speed. If there is a strong relationship between word reading and music reading, this thesis is plausible.

Rhythmic reading was defined as "music reading embodying only responses to the rhythmic aspect of the musical notation, to the exclusion of pitch and loudness".

Maximal speed pacing was defined as "the experimental technique employed in this study under which the subjects were forced to respond at rates of speed which, for a given set of stimuli, reached the limit of group capacity for correct response".

The notation used was limited to vocal style (flagged notes). Meter signatures used were 2/4, 3/4, and 4/4. Whole, half, quarter, eighth, and sixteenth notes were used, some with dots and ties. The corresponding rest values were allowed, although it was noted that only the quarter rest was used and then only singly at the end of a test item or a four-bar phrase.

The subjects were sophomore female students enrolled during the 1958-59 school year at the State University of New York Teachers College at Cortland.

METHODS AND PROCEDURES

Four class sections of "Music 101--Essentials of Music" were used in the experiment. Two instructors each taught an experimental and a control section to which the students were assigned at random. There were three phases to the experiment.

The Preliminary Phase of twenty-six sessions consisted of teaching fundamentals of music reading. In order to control variables, several standardized and special tests were administered during this phase including the author's Rhythmic Notation Test. This test was given twice during the twenty-fifth session.

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* Order number 64-13, 852, microfilm $3.00, xerox $4.80.

Phase I consisted of eighteen sessions. Ten minutes were spent in each session with either the experimental or control methods. Tests given during Phase I were the author's Rhythmic Performance Test which was administered at the beginning and the end of the phase and Seashore's Measures of Musical Talents. The experimental method differed from the control method in that the assigned rates of rhythmic practice were progressively faster until the students approached maximal speed. The control groups performed at identical rates which were well within their response capability.

Phase II consisted of thirty-four sessions in the second semester. Subjects were reassigned to sections according to scheduling requirements. The course continued as a logical extension of the skills acquired in Phase I, but no differentiation in teaching methods was made, i.e., the experimental method was confined to Phase I of the experiment. At the end of Phase II, a retest using the Rhythmic Performance Test was made.

The various testing and statistical procedures are lengthy and it is obvious to the reader that great care was taken to control variables and to give rigorous statistical treatment to the data. For example, previous differences in individual rhythmic reading achievement were controlled by a criterion pretest, Seashore total scores, and grade point averages.

RESULTS

The experimental method of maximal speed pacing did not, in terms of this experiment, cause a significantly different rhythmic reading achievement over the control method. The only significant source of variation shown in the analysis of covariance was the instructor. The author gave several plausible explanations why the design of the experiment failed to support the primary thesis. Evidence indicates that the experimental technique may prove effective when given by selected instructors, but only over longer instructional periods. A by-product of the thesis was the development of two rhythmic tests with established reliability and validity.

CRITIQUE

Dr. Trisman is to be commended for his objectivity and carefulness. The rigorous statistical procedures employed may have led to difficulties in proving significance. A different design may have produced positive results. For example, the experimental training was limited. Also, much time elapsed between the experimental training and the final testing. It is doubtful that any similar group would retain the effects of limited training for this long. The use of two instructors in providing the experimental training meant the material was not presented in an identical manner, and many differences could thus be explained. The experimental method might have had a better chance to yield positive results if it had been conducted by only one instructor and over a longer period of time.

The use of flagged notes in the practice and testing may have been a retarding factor in subject response. The grouping of notes as is commonly done in instrumental music would probably have helped the experimental subjects to respond faster and more accurately.

In spite of the above possibilities, it must be assumed at present that the maximal speed pacing technique is no more effective than other techniques.

To secure carefully documented information about how persons respond to written musical notation is a great need in music education. Studies such as this one, carefully conducted and accurately, objectively, and clearly reported will add to the knowledge in this area. Dr. Trisman is to be commended for his contribution to music education research.

Turrentine, Edgar M. Predicting Success in Practice Teaching in Music.
State University of Iowa, 1962

Reviewed by Gaylord H. Farwell

In verifying the need and applicability of this study, the author reviewed the literature which is concerned with the prediction of general college success, prediction of success in teaching, and prediction of success in practice teaching. He established the direction that research had taken in exploring the above three areas and also ascertained that very little research had been undertaken in the specific field of practice teaching in music. He stated that:

> A formal educational institution has two major responsibilities: the responsibility of helping the student become aware of and exploit his capacities, and an equal responsibility of providing society with members who will maintain and further develop the strengths of that society.

Counselors have need for valid predictive devices and need to use these devices at their maximum efficiency level.

Purpose

The purpose of the study was to assess the relationships between the independent variables, singly, and in combination, and the dependent variable so that the best combination could be found, administratively, for the prediction of success of future students enrolling in practice teaching in music.

In short, the author developed a formula for predicting success in practice teaching in music.

Limitations

The test and achievement scores of students used to develop the formula were from one institution of higher learning, The Conservatory of Music, Lawrence College, Appleton, Wisconsin. A rather small number of cases, 80, was involved. Changing grading standards may have and may introduce ambiguities in the meaning of obtained grade-point averages in student teaching.

Procedure

Pearson product moment correlations were computed between the chosen predictors and the criterion. The criterion was the numerical grade earned in the Conservatory's student teaching program. The predictors were: The Ohio State University Psychological Test, college entrance examination board's Scholastic Aptitude Tests-Verbal and Mathematical, Otis Quick-Scoring

Mental Ability Test-Grades 9-16, high school graduating class percentile rank, grade point average of college sophomore year, grade point average of sixteen hours of required music theory, and grade point average of teacher-training courses completed before enrollment in practice teaching.

Multiple correlation analysis was used to determine and evaluate the predictive value of various combinations of the independent variables.

Summary and Conclusions

Dr. Turrentine desired to create a predictive formula which could be easily evaluated by counselors in determining potential success in practice teaching in music. After carrying out the computations stated above he came to the conclusion that:

1. The best single predictor of success in practice teaching in music at Lawrence College is the grade-point average of teacher-training courses completed before enrollment in practice teaching. The prediction equation developed in conjunction with this predictor is:

Predicted GPT equals .344 plus (.862)GPA-Tt

GPT represents grade practice teaching
GPA-Tt represents grade point average-teacher training

The correlation of this predicted GPT and actual GPT was .564 for the most recent group of 40 graduates.

2. The best two-variable combination of predictors of success in music practice teaching at Lawrence College includes high school graduating class percentile rank and grade point average of teacher-training courses. The prediction equation developed from the correlation of these variables is:

Predicted GPT equals 1.405 plus (-.016)HS% plus (.976)GPA-Tt

The correlation of predicted and actual GPT was .649 when this equation was used.

3. No other predictor measures contribute an amount that is clearly more than chance to the accuracy of prediction. If a third variable were to be considered, despite lack of proof of its effectiveness, the total score on the Scholastic Aptitude Test (SAT-T) would be the most likely choice.

Suggestions for Further Research

1. Continued follow-up of the derived prediction equations of this study.

2. Invesigation of variables such as motivation, which account for students performing markedly above or below their predicted levels.

3. Prediction of on-the-job success and the relation of practice teaching performance to subsequent teaching success.

Comments

This reviewer found this to be a most interesting study. The study could be replicated and thus meets one of the criteria of meaningful research. Actually, replications in a number of institutions are necessary if the formulae derived in this study are to be suitable for general application.

I am of the opinion that replication in other institutions would not be a very complicated matter utilizing the groundwork of Dr. Turrentine. If these replications were made and predictive validity established, it would seem that a real contribution has been made and counselors and advisors would have a useful counseling tool at their command.

The difficulty of carrying out replication studies by a doctoral student in a number of institutions is recognized. My only criticism of the study as it now stands, is that it only has applicability to Lawrence College and use of the derived formulae in predicting success in student teaching in music at other institutions of higher learning is dependent upon acquisition of rather extensive data and establishment of general predictive validity.

The possibility exists that an interested researcher with a minimum of effort might find these derived formulae most useful in his own particular institution. In utilizing the formulae, attention would have to be given to the similarities and disparities of teacher training courses and computation of the grade-point average in teacher training courses as defined by the author.

AN EXPERIMENTAL STUDY OF CLASS AND PRIVATE METHODS OF INSTRUCTION IN INSTRUMENTAL MUSIC* University of Illinois, 1965

Loren Roger Waa

Reviewed by GAYLORD H. FARWELL
and JAMES M. SHUGERT

The purpose of the investigation was to evaluate the effect of class and private methods of instruction on musical achievement and musical aptitude of instrumental beginners in the elementary school.

The following hypotheses were formulated to guide the study:

1. Research hypothesis, H_1: Students who receive instrumental instruction will score higher on tests of musical aptitude and musical achievement than students who do not receive instrumental instruction.
   Null hypothsis, H_0: There will be no significant difference in scores on tests of musical aptitude and musical achievement of students who receive instrumental instruction and those who do not.
2. Research hypothesis, H_2: Students who receive private instruction will score higher on tests of musical aptitude and musical achievement than students who receive class instruction.
   Null hypothesis, H_0: There will be no significant difference in scores on tests of musical aptitude and musical achievement of students who receive class instruction and those who receive private instruction.

Waa defined "class method" as a method of instruction presented to any group of nine or more students who play heterogeneous instruments. No other types of methods were investigated. Instrumental beginners included only fifth and sixth grade students who began wind or percussion instrumental instruction for the first time.

The terms "musical achievement" and "musical aptitude" were defined by the tests used to measure their presence. The Farnum Music Notation Test and the Watkins-Farnum Performance Scale, Form B served as measures of musical achievement while the Seashore Measures of Musical Talents was employed to measure musical aptitude.

One hundred and eight fifth and sixth grade students from six rural elementary schools in central Illinois were subjects for the study. It was assumed that this study population was fairly homogeneous as concerns socioeconomic background, and no experimental controls were introduced to check this factor. The study population included 64 instrumentalists and 44 non-instrumentalists.

Music education researchers seldom have the opportunity to affect complete randomization in sampling. Waa had to use the instrumental students that were available in the experimental schools, but beyond this first step he was able to select students into groups by a table of random numbers. The following experimental design was constructed to test hypotheses:

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*Order number 65-7179, microfilm $3.00, xerox $7.40.

Class and Private Instruction

Group 1	O_1	X_1	O_2	(Instrumental)
Group 2		X_1	O_2	(Instrumental)
Group 3	O_1	X_2	O_2	(Instrumental)
Group 4		X_2	O_2	(Instrumental)
Group 5	O_1		O_2	(Instrumental)
Group 6			O_2	(Instrumental)
Group 7	O1		O_2	(Non-instrumental)
Group 8			O_2	(Non-instrumental)

O_1--pretest, X_1--private instruction, X_2--class instruction, O_2--posttest

As the design shows, groups 1 and 2 received private lessons while groups 3 and 4 received class instruction. The investigator participated in teaching groups 1 through 4. Groups 5 and 6 also received instruction in instrumental music, but the investigation was not concerned with the type of instruction they received. Since Waa did not participate in teaching groups 5 and 6, these groups served as a control on the alerting effect. Groups 7 and 8 received no instrumental music instruction and were used in the experiment to determine what effects on musical aptitude and achievement could be attributed to instrumental music instruction. Groups, 2, 4, 6, and 8 were not pretested as a control for the practice effect.

Experimental groups were balanced on the basis of I.Q. scores, general music grades, teachers' estimations of academic achievement, and the students' ratings of their general music class (groups 1-8) and instrumental music class (groups 1-6).

Five uncontrolled variables had to be considered. As previously mentioned, it was assumed that the socio-economic factor would have little or no influence on the results of the study. A second factor was the testbooks used by the four teachers involved. No agreement could be reached on a single textbook, so teachers were encouraged to use as great a variety of textbooks as possible. Because no experimental group received instruction from a single book and no one book was used exclusively with a single experimental group, it became impossible for one method book to significantly affect the outcomes of the study.

Some variation occurred in the amount of time devoted to general music in the experimental schools, but this variation had no significant effect on the results of the _Farnum Music Notation Test_.

A fourth factor concerned the possibility of individual differences in teaching techniques of the four teachers and the effects of these differences on experimental results. A statistical comparison of scores of the four teachers' students on the _Watkins-Farnum Performance Scale_ revealed no significant differences.

A fifth and most crucial variable concerned the fact that one school in the study had beginning band twice a week for forty minutes, three schools had it twice a week for twenty minutes, while two schools had no beginning band program at all. This factor seriously damaged the internal validity of the study.

The experiment was conducted over a period of twelve weeks. Twelve weeks was considered the optimal duration for the study because the rental period for band instruments was twelve weeks; to extend the experiment beyond the rental period would place the experiment in jeopardy due to loss of subjects through dropout. Students in groups 1 and 2 received one half-hour private lesson per week for twelve weeks, while students in groups 3 and 4 received one half-hour class lesson per week for twelve weeks. Groups 1, 3, 5, and 7 were pretested with the Farnum Music Notation Test and the Seashore Measures of Musical Talents. All groups were given these tests at the end of the experimental period. In addition, the Watkins-Farnum Performance Scale, Form B was administered as a posttest to groups 1 through 6. Nonparametric statistical methods (Kruskal-Wallis one-way analysis of variance and the Mann-Whitney U Test) were used in treating the data.

In testing hypothesis H_1, the null hypothesis was rejected on only one measure. No significant differences were found on tests of musical aptitude and musical achievement between students who received instrumental instruction and those who did not. However, on the pitch test of the Seashore Measures of Musical Talents students who received instrumental instruction significantly outscored students who did not receive this instruction.

In testing hypothesis H_2, the null hypothesis was rejected in two cases. No significant differences were found on tests of musical aptitude and musical achievement between students who received private instruction and those who received class instruction. The two exceptions were the time test and the Watkins-Farnum Performance Scale; both measures indicated a superiority for the privately taught students.

The evidence favoring the privately taught students was clouded by the band no-band variable. The following table is presented to illustrate the effect of the band no-band variable on the Watkins-Farnum Performance Scale:

Table XXVII

Group by Group Comparison of the Band No-Band Variable on Watkins-Farnum Performance Scale Posttest Scores (Significance Levels)

Group	No Band	Forty Minute Band
Twenty Minute Band	.00032*	.6242
Forty Minute Band	.0118*	

*At or smaller than the .10 level is considered significant.

Significant differences existed on the posttest scores of the Watkins-Farnum Performance Scale between band and no-band students. No significant difference existed between those who met twenty minutes twice a week and those who met forty minutes twice a week. It is worth noting, however, that while the band students of groups 1 and 3 outscored their no-band counterparts on the Watkins-Farnum Performance Scale, the no-band students of group 4 did slightly better on the performance scale than the band students of group 4.

Class and Private Instruction

Waa's conclusions are necessarily couched with reservations due to the influence of the band no-band variable. As a word of caution, Waa indicated the necessity for replication of the study with the elimination of the band no-band variable before accepting the conclusions of the study that show some superiority for the private method.

Waa concluded: (1) that instrumental students scored significantly higher in the pitch test of the Seashore Measures of Musical Talents; (2) that lack of band experience definitely affected some of the students in their performance skill; (3) that privately taught students seemed to score significantly higher in the time test than class students; (4) that the evidence seemed to favor privately taught students in performance achievement as revealed by the Watkins-Farnum Performance Scale.

COMMENTS

The question of whether class or private methods of instruction are more productive of gains for beginning instrumentalists measurable on tests such as the Watkins-Farnum Performance Scale, the Farnum Music Notation Test, or the Seashore Measures of Musical Talents has been one of the most ill-treated problems in instrumental music education. If we were to identify the most basic questions in the field, the class method versus private method controversy would be high on the list. Despite the importance of the question, and despite the fact that performance achievement seems to be a prime objective among instrumental music teachers, little has been done in the way of controlled investigation to attack the problem.

Waa has not asked which method is most practical in terms of expenditure of time and money for student and teacher. The reviewers see this as a strength of the study. The history of instrumental music education shows clearly enough that the fundamental problem of comparative effectiveness of the two methods in bringing about musical growth has too often been glossed over or side-stepped because of the difficulty of teaching a large number of students by the private method in a public school situation. The literature is glutted with statements of authoritative opinion which might be summarized: "the results obtained from use of either method appear to be about equal; so we will use the class method since it is most practical and provides group motivation." Waa simply asked how the methods really work. Music educators could profit immeasurably by conducting controlled investigations to find out what works and then by finding ways to make practical application of workable techniques.

The design for this study was well conceived and could easily be replicated. In Bulletin No. 3, Colwell pointed out the importance of design for research studies.[1] Continued investigation using a few workable designs such as this could go a long way toward determining the validity of common practices in music education.

As stated earlier, Waa encountered the normal problems of music education researchers in trying to achieve a semblance of randomization in sampling. But he limited himself unnecessarily in the process of selecting students into experimental groups by setting the minimum number for a class at nine. Especially since the experimental schools were small rural schools where the total number of beginners in any one of the schools did not exceed twenty-nine, it might have been desirable to set the minimum number for a class at 5 or 6. This would have made more of the schools eligible to receive class instruction and thereby have increased opportunities for randomizing the selection of students into groups.

Granting that music researchers frequently have to accept less than the ideal in designing experiments for public school experimental situations, there is a limit to the degree of hazard due to individual differences among schools that the researcher should permit. Damage to the internal validity of Waa's study by the band no-band variable should have been foreseeable at the outset. The research effort would undoubtedly have been more fruitful for the researcher and for his profession if prior to the experiment he had either substituted schools appropriately so as to eliminate this variable or been able to persuade the selected experimental schools to make the necessary changes in their instrumental music curriculums to eliminate this factor.

The clouding of results by the band no-band variable was unfortunate; still the study has much to recommend it as a fine piece of basic research. Waa's study is a sorely needed first step toward valid solution of one of the oldest and most fundamental questions in instrumental music. The design and procedures of investigation are commendable and worthy of further study.

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[1] Colwell, Richard. "The Importance of Design in Research Studies," Bulletin, No. 3 Urbana: Council for Research in Music Education, Spring 1964, p. 171-246.

Warner, Thomas Everett. *Indications of Performance Practice in Woodwind Instruction Books of the 17th and 18th Centuries*.* New York University, 1964

Reviewed by Brian Klitz

Warner's dissertation is presented in two parts, the first of which discusses general aspects of performance practice, woodwind articulation, tempo, dynamics, melodic ornamentation and rhythmic alteration, improvisation, and miscellaneous considerations having to do with performance practices in the 17th and 18th centuries. Part two provides a discussion of the instrumental tutor--defined as a work containing some type of written instruction for playing--and the author's procedures in compiling the bibliography. An impressive number (439) of woodwind tutors are annotated in part two, many of which Dr. Warner examined to glean the information presented in part one. Pages from some of these tutors are reproduced in the appendix. A selected bibliography of sources completes the dissertation.

One avowed purpose of this study is to show that restoration of actual customs of performance will produce a far "purer" realization of the original intention than a strictly literal interpretation. Warner states that "the sole criterion for deciding which conventions are practical to revive today ultimately depends on the musical affect they produce. In most cases attention to the customs of the 17th and 18th centuries rewards us by infusing a reborn vitality in the music, an element that has largely been obscured by either over-Romantic interpretations or misguided literal renditions."

The author elicits such questions as the following in his chapter on articulation: Should the present-day performer consider tonguing procedures applicable to instruments of 250 years ago? Is it possible for one set of syllables to serve instruments that require a different type of attack by the tongue, as, for example, the flute and oboe? His personal experimentation with modern instruments reveals that on both the flute and the recorder *tu* and *ru* tonguings are quite easily produced. However, present-day oboists cannot tongue these syllables with equal facility because of the modern bore dimensions. One solution for present-day oboists wishing to experiment with *tu* and *ru* syllables consists of scraping a reed thinner than normal at the tip to permit an easier response. After inspecting the literature of the period he concludes "it is thus apparent that no amount of articulations added by modern performers will ever satisfactorily replace the need of Baroque music for *tu* and *ru*. This does not imply that all the notes not slurred in the original source were customarily tongued. On the contrary the choice of articulation frequently resulted from a performer's own musical judgment and taste. One must conclude, however, that modern single-syllable tonguing often produces a non-musical effect when applied extensively to music from the 17th and 18th centuries."

*Order number 65-1678, microfilm $6.00, xerox $21.20

Warner draws a number of general conclusions concerning articulation from 1600 to 1830. Most important, the instruction books leave no doubt that articulation was considered a vital aspect of expression. Modern performers do great injustices to 17th and 18th century music when they faithfully play it as written. Using a single tonguing, instead of the correct combination of alternating syllables, often results in a dry and lifeless rendition in which the motivic patterns are hammered out with boring regularity. Refusal to add tasteful slurs to the music on the ground that none is indicated is equally incorrect. Slurs were sometimes indicated in music, but often it was the music that indicated the slurs. It is therefore imperative that musicians today gain a thorough insight into the customs and conventions regulating 17th and 18th century articulation.

His conclusions on tempo: While several of the signatures did exercise a general influence over tempo when other indications were lacking, they never forced a rigid control, and at the beginning of the period, time signatures exerted a decreasing influence in defining tempos. As the century progressed, the practice declined and the tutors dropped discussion of it. With time signatures no longer limiting the bounds of tempo, and with the failure of mechanical gadgets to set precise indications, the musician turned to common customs of personal taste and tempo markings to guide him.

His conclusions on dynamics: The available evidence suggests dynamic requirements--even at the beginning of the 17th century--often consisted of more than occasional piano or echo contrasts. Various contemporary authors recommend opposition of piano and forte sections, as well as judicious use of the crescendo on small phrase fragments.

On alterations Warner suggests that performers today often overlook the importance of rhythmic freedom to 17th and 18th century musicians. Alterations are by no means merely historical oddities to be locked away in an old attic trunk of forgotten customs. On the contrary, their judicious application according to the canons of good taste serve to restore to Baroque music some of the rhythmic vitality lost through our present straight-forward and mathematically exact performances.

The practical application of improvisation to modern performance is often a compromise at best. Beyond adding occasional ornaments, the majority of today's performers are rarely inclined to improvise cadenzas or to elaborate upon a given melody in a style compatible with 18th century music. The most effective improvisation ultimately demands individual interpretation. Any elaboration should enhance the original. If not, we would do far better by following Quantz and Lorenzoni's suggestion to perform the melody as written.

The author draws heavily on Quantz, but also presents information from less well-known sources, dealing with or touching upon a number of problems for which there are no ready solutions. Dr. Warner's obvious recognition of this fact and his refusal to project the information he has into hard and fast principles is noteworthy. A cross-indexed list of tutors (by instrument and alphabetically by composer) would make his chronological listing a more usable source for related studies.

Wheeler, Ronald W., Jr. A Study in the Measurement of Musical Aptitude..
University of Oklahoma, 1959.

Reviewed by Paul R. Lehman

For several decades music educators and psychologists have sought with varying degrees of success a valid means of identifying musical aptitude in children and adolescents. The difficulty of devising such a test battery is severely compounded because strictly speaking, it is impossible to measure aptitude; the best one can do is measure achievement on an appropriate evaluative instrument and from this make inferences concerning aptitude. Nevertheless, by this curcuitous approach several seemingly valid test batteries have been constructed--notably those of Seashore, Drake, and Wing.

Wheeler has designed a test of musical aptitude, recorded it on tape, and broadcast it by means of commercial radio to the students of grades 4 through 12 in 20 schools of Tillman County, Oklahoma. Further, he has analyzed the statistical data thus obtained and has compared the results achieved on his test by a group of high school students with those achieved by the same students on Seashore's Measures of Musical Talents and Kotick and Torgerson's Diagnostic Tests of Achievement in Music.

The Wheeler battery consists of four parts. The first includes 30 pairs of tones a semitone apart through a range of five octaves. The student is asked to indicate which of the two tones is higher in pitch. The second part is a 30-item test of time. For each item a tempo is established by means of a metronome and the student is instructed to continue counting to himself after the metronome ceases until he is told to stop. He is then to write the number to which he has counted. The third and fourth parts, each comprising 20 items, constitute two parts of a test of tonal memory. In the first, the student is asked to indicate whether two brief melodies are the same or different. In the second, a sustained tone is presented and the student is asked to indicate how many times the tone appears in a subsequent melody. The answers vary from one to five. The test requires approximately 33 minutes, and the tones are produced by an electric organ.

The author has estimated the reliability of his test by means of internal consistency coefficients, using the Kuder-Richardson formula 21:

Test	r
Pitch	.84
Time	.85
Tonal Memory, Part I	.54
Tonal Memory, Part II	.74
Tonal Memory, Combined	.76
Total Raw Score	.93

He has assumed that all of the items were of equal difficulty. However, if it is no more difficult to judge an interval from C-sharp to D than one from F-sharp to G, as Wheeler suggests, one wonders why intervals other than the semitone were not included in the test. Further, the reader may question the author's contention that is is no more difficult to judge an interval in time of seven seconds than one of four seconds. If a student either accelerates or retards when supposedly maintaining a constant tempo it is clear that his error will be greater over a longer period than over a shorter one.

The validity of the Wheeler battery is derived by comparison with similar existing tests. The following Pearson Product-Moment coefficients of correlation between the Wheeler test and the Seashore Measures of Musical Talents were obtained:

Test	r
Pitch	.69
Time	.11
Tonal Memory	.60
Total Raw Score	.71

Though the r for the test of time is not significantly different from 0 at the 5 percent level, Wheeler points out that the r between Drake's and Seashore's tests of rhythm is only approximately .17.

Each test of Wheeler's battery is different in its approach from the corresponding test of Seashore's. Wheeler's and Seashore's tests measure distinctly different aspects of the sense of time, for example. The findings appear to indicate that there can be more than one way to evaluate the various facets of musical talent. The low but significant positive r's between Wheeler's test and that of Kotick and Torgerson suggest, not surprisingly, that aptitude cannot be measured satisfactorily by an achievement test and that achievement cannot be measured satisfactorily by an aptitude test.

Wheeler's test is unusual in that the entire battery is recorded, including the instructions and the examples. As a result, the test can be given by persons with no musical training whatever, and there is no need for the examiner to study instructions or undertake other preparation. Further, the test will be given in precisely the same way with each presentation.

Wheeler's study has been well thought out and his statistical findings are thorough and correct. He has provided music educators with a test of musical aptitude roughly comparable in usefulness to existing tests of musical aptitude. This is a worthwhile accomplishment, but no longer is it sufficient to design tests that are merely as good as existing tests; they must be distinctly better. It is likely that Wheeler would agree with this premise, and undoubtedly such was his goal.

The author has successfully demonstrated that different approaches to the measurement of musical talent can yield substantially similar results. He has also shown that a reliable test can be given in a relatively short time. This study represents another important step toward the possible ultimate determination of the basic components of musical aptitude and the most adequate means of identifying them.

A STUDY OF PROFESSIONAL MUSIC EDUCATION AT THE OHIO STATE UNIVERSITY* Ohio State University, 1958

George Hugh Wilson

Reviewed by Edward H. Cleino

In examining the music education program of Ohio State University, Wilson was concerned with elementary and secondary methods courses, conducting courses, instrumental and vocal applied music instruction, applied music instruction, and elementary and secondary student teaching.

Sources of data for this study included 102 graduates of OSU (1946-56), 37 seniors concluding their student teaching experiences (1956), music education faculties of 29 publicly supported institutions, 56 teacher education institutions accredited by NASM, 21 teachers of music courses at OSU, 38 cooperating teachers, and 34 supervisors of music who had supervised recent graduates of OSU.

For his procedures, Wilson developed a list of criteria for evaluation of teacher education programs. By questionnaire, he asked his correspondents to:

1. express agreement or disagreement with the criteria
2. indicate the extent to which the criteria were met at OSU and at the other selected institutions
3. indicate the course or area at OSU and at other institutions most helpful in providing knowledge and skill in each of the listed criteria

The basic philosophy presented a fine description of the end product of the professional program:

> "A good teacher, aside from competence in his specific field, must have an understanding of the whole field of general education as it applies to the training of all pupils in the public schools. He must understand children, how the learning process operates, and understand and practice the methodology of enlightened teaching. The teacher must attune his field so that it contributes to the cultural understanding and feelings of the pupils, and becomes an integral part of the school program. Technique and knowledge must serve aesthetic values and realizations so that the auditory stimuli resolve into meaningful experiences."

Chapter II is entitled "Criteria for a Professional Music Education Program of Teacher Education." In this chapter Wilson presents 29 criteria developed from other dissertations, from ACE, MENC, NASM, and AACTE sources, including items of general and specific natures, but too detailed to be repeated here (pages 21-28 of the dissertation). These criteria concern understandings of children, working with administrators, program content, student teaching experiences, business management, selection of materials, etc.

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*Order number 58-2647, film $4.80, xerox $16.00.

Chapter III presents the opinions of various groups toward the criteria for a professional music education program. The criteria developed in Chapter II were evaluated by the Ohio State University graduates, by seniors completing their student teaching experiences, and by the respondents enumerated in paragraph 2 of this review. Some general agreement was received, though some respondents had reservations concerning the likelihood of achieving all of the criteria in the undergraduate curriculum.

Chapter IV is a presentation of the professional music education program at selected institutions. By questionnaire, Mr. Wilson contacted 56 publicly supported institutions accredited by NASM. In general, the respondents agreed upon the validity of the criteria. Many rated their own institutions low in achieving a sizeable number of these. As would be expected, there was a lack of agreement in how these criteria might best be implemented.

Chapter V is concerned with the extent to which the criteria were being realized at Ohio University. Data were assembled by questionnaire from graduates, senior students, supervisors, cooperating teachers, and teachers in the School of Music. These groups were handled separately and indicated a gratifying agreement on most items. Comments written in by graduates of Ohio State University included:

Need a course in dance band arranging
Less major applied study
More choral and instrumental arranging
More emphasis on liberal arts courses
Some thought on television in today's schools
More history of music
More ensemble experience
More "down-to-earth" methods
More evaluations such as this study
Teach them about podunk!

In evaluating specific classes, these graduates made their greatest number of suggestions concerning music methods courses and student teaching. Included in the comments about methods courses were:

> Notebooks are a waste of time, professors do not actually look at them, and graduates say they do not use them.
>
> More actual practice in the handling of a class should be offered.
>
> Methods courses should be varied and more practical than they now are. These are the most important courses in preparing teachers. They should be very thorough in every area of teaching.
>
> Methods--some before--some during--biggest share should be offered after student teaching.

For student teaching experiences, comments included:

> Student teaching was the best course (in implementing the criteria).
>
> Student teaching should be given earlier.
>
> More student teaching should be offered.
>
> We should have learned about discipline, group insurance

> policies, teacher tenure, and how to know exactly how music fits into a particular school's curriculum before signing a contract.
>
> Students should have more contact with public school children before beginning their student teaching.

The supervisors responding to the questionnaire indicated a stronger belief that graduates possessed the qualities listed than did other groups. (Graduates, seniors, OSU Teachers). The seniors believed that they possessed fewer of the listed "knowledges and skills" than did graduates, and all groups indicated that a knowledge of business and physical aspects of music education was lacking.

Chapter VI presented 22 recommendations for the further development of professional music education at Ohio State University. These are listed here, since the reviewer believes that faculties of other institutions might profit therefrom. The brief parenthetical comments following many of the recommendations attempt to summarize the textual expansion presented for each.

1. Observation of and participation with children during the sophomore year should be provided. (Many respondents commented that methods classes meant little until after student teaching. Students could help the regular teacher in many routine chores; aiding in summer music festivals and camps would be educational.)
2. Increase the time given to observations as a part of methods courses. (Observations form a basis for meaningful discussions of music and the learning process.)
3. A definite unit should be included in the methods sequence, or student teaching seminar, concerning scheduling of various music activities. (Examination might well be made of the schools where student teaching is taking place.)
4. The music education staff of the School of Music should stress creativeness in teaching music. (Creative teaching must be through creative attitude of all of the staff. Students tend to teach more as they were taught!)
5. Strive to select music education staff members who have had successful public school music experience. (Sixty-eight percent of the OSU teachers of music education courses had public school music experience; only 11 of the 29 responding institutions indicated that all of their music education teachers had public school experience.)
6. Devise a more thorough method of periodic evaluation of undergraduates. (Suggest a periodic check sheet for faculty evaluation of potential teaching ability. Students receiving consistently low scores would be counseled.)
7. A plan should be devised for follow-up of graduates. (There was strong agreement that follow-up was an important function of the school. Faculty time and expenses should be budgeted for this purpose.)
8. Consideration should be given to an internship program for music education students. (The degree would be withheld until completion of a year of internship.)
9. Minor instrument and voice classes should place more emphasis on methods of presenting problems to children. (Emphasis in voice and instrument classes should be on teaching others--not on skill growth for the university student.)

10. Areas and individual teachers in the School of Music should be encouraged to employ evaluative techniques as a means to improvement of present practices. (Methods might include contact with graduates and their administrators, formal and informal study by teaching staff, and individual course evaluation.)

11. The teaching of functional piano should be constantly studied for methods of improvement. (It was recommended that emphasis be placed on transposition, chording, accompanying, and sight reading.

12. The organization and teaching of small ensembles (vocal and instrumental) needs to receive more emphasis.

13. An attempt should be made to help women learn more about male voices and glee clubs.

14. More stress should be placed on the effective use of audio-visual aids in music education. Respondents agreed on the usefulness of these tools, but little provision is made for their use. Observations and resource people demonstrating these aids in methods classes would be helpful.)

15. A more realistic knowledge of the problems of teaching music in school systems where resources are limited should be provided teacher education students.

16. There should be more opportunity for student participation in minor instrument classes. Teachers of these classes could utilize students as teachers in specific teaching situations.)

17. Increased emphasis should be placed on laboratory groups of orchestra, band, and chorus. (Opportunities are needed to practice rehearsal techniques and to study appropriate literature.)

18. Increased emphasis should be placed on techniques of conducting and rehearsing school and community groups. (More conducting experience in conducting classes and in laboratory orchestra, band and chorus. Conductors of performing groups could aid these future teachers by analyzing interpretative and rehearsal problems during regular rehearsals.)

19. There should be increased emphasis on the business and physical aspects of music education. (Teaching seminars, field trips, and methods courses could contribute here.)

20. Some stress should be placed on the teaching of theory classes in schools. (Visiting good high school theory classes is suggested as an aid.)

21. The School of Music should stress a better understanding of music for school orchestras.

22. The music education staff should provide experiences which would further the potential teachers' understanding of child guidance.

CRITIQUE

It is never easy to take an objective look at one's self, and this is especially difficult when the "self" has so many facets as a collegiate music education program. The problem is compounded by the fact that all graduates have not had the same experiences, even though their transcripts show essentially the same courses, for emphases of various teachers are bound to differ. Further, the student teaching experiences are bound to differ widely.

The researcher approached his task in a most defensible manner, setting up criteria which could lead to an objective examination of the program. One might suggest that perhaps an unnecessary step was taken in getting other institutions to react to the criteria, for these items are already validated in the literature. However, it may be comforting to OSU to find that other faculties have their problems and differences, as well.

The reliability of the responses to the rating scale may be subject to some question, but the large number of respondents (including 102 graduates of OSU and 37 senior students) would tend to offset most criticism in this regard.

Without doubt, the faculty of the School of Music of The Ohio State University can profit greatly by the results of this study, and its influence to other educational institutions can be equally great. The meat of the study, so far as this reviewer is concerned, is contained in the comments and suggestions provided by the graduates of the OSU program. These people have progressed from their undergraduate studies into teaching situations, and many had doubtless engaged in graduate study prior to their response. They are the customers--the best evaluators of the program. Such suggestions as, "Methods--some before--some during--the biggest share should be offered after student teaching" and "Student teaching should be given earlier" are already bearing fruit in the thinking of educators. These suggestions, coupled with Wilson's own recommendations, can be profitable guides to music education programs throughout the country. Their implementation can contribute greatly to the improvement of instruction.

Winold, Charles Allen. The Effects of Changes in Harmonic Tension Upon Listener Response.* Indiana University, 1963.

Reviewed by C. Edward Brookhart

For several decades now the effects of music upon human behavior have been studied by music therapists. Emphasizing subject response, these studies have generally given insufficient attention to the description and analysis of the musical stimulus used. Recognizing that the study of responses to music may uncover important information, music theorists have in recent years begun to show an interest in the effects of music as they are related to theoretical analysis. This experimental study is designed to have relevance for both the music theorist and the music therapist, thus avoiding what the author seems to feel is a regrettable tendency for the paths of the two disciplines to diverge.

As the title suggests, the central consideration of this study is the effects of changes in harmonic tension upon the listener. Two separate but related experiments were conducted in order to investigate (1) the physiological effects of isolated chords of varying classifications of harmonic tension as indicated by measurements of the galvanic skin response and (2) the psychological effects of short musical excerpts of varying classifications of harmonic tension as indicated by measurements using the Hevner Adjective Circle.

This study is primarily stimulus-oriented and concentrates on one isolated basic element of music. It is, therefore, admittedly subject to the objections of those who maintain that music is a Gestalt which loses its significance when it is broken down into its constituent elements. However, Winold feels that the problems of studying music on the sensorial level "can be attacked with an atomistic approach....There can be little doubt that research dealing with the effects of music on the human organism is still at the point where it is necessary to attack minor problems that are important though peripheral in nature." (p. 11)

> ...it is not suggested that the results of the study will tend to establish any form of precise 'musical pharmacopoeia,' whereby a particular musical sonority will be prescribed for a particular mental, emotional, or physical requirement....Nor is it expected that this investigation will produce a new theory of consonance and dissonance to be added to the towering edifice of speculation on this vexing and challenging problem.
>
> ...the study was undertaken only to investigate tendencies, and not to discover absolutes. (pp. 12-13)

In Chapter II a review and evaluation of theories of consonance and dissonance from the time of the early Greeks to the present are given as a basis for the development of a classification system for the stimulus. Winold concludes that the terms "consonance" and "dissonance" (or harmonic tension) should not be discarded simply because of the multiplicity of theories which define the terms differently and which

*Order number 64-521, microfilm $3.75, xerox $11.70.

often confuse functional and nonfunctional definitions. Recognizing that most of the recent literature on the problem adopts a functional definition, Winold argues for the retention of a nonfunctional definition that may be used as a means of classifying vertical sonorities in purely musical terms. In formulating this definition he further concludes that for the purpose of his study "a highly complex, subtle, and infallibly accurate classification of harmonic tension was not required." (p. 81) Therefore, concerned only with the "gross" aspects of harmony, he evolves the following chord classification system.

Consonant chords:	Major and minor triads and inversions (diminished and augmented triads).
Mildly dissonant chords:	Seventh and ninth chords and inversions (nontertian structures with not more than one of the following intervals: minor second, major seventh, tritone).
Strongly dissonant chords:	Tertian structures more complex than ninth chords, nontertian structures with more than one of the following intervals: minor second, major second, tritone. (pp. 86-87)

From his review of the literature on psycho-physiological and psychological studies of the influence of music upon human behavior, Winold concludes that the methodology employed in the former is of limited usefulness in attacking problems of aesthetics. On the other hand, psychological studies, particularly those employing the Hevner Adjective Circle, have successfully explored certain problems of affective response to music.

The First Experiment

The purpose of the first experiment was to test two null hypotheses.

1. There is no difference in galvanic skin response to isolated six-part chords of three different levels of harmonic tension.
2. There are no differences between eight subject categories in galvanic skin response to isolated six-part chords of three different levels of harmonic tension.

The subjects participating in the experiment were 48 students at Indiana University divided into eight groups according to the following factors: music major and nonmusic major; male and female; graduate and undergraduate. Students were tested individually during the early evening hours under adequately controlled laboratory conditions. The following two tables, found on pages 139 and 140 of the dissertation, summarize the results and the statistical analysis performed.

Table 1.--Mean Percent GSR* for Eight Subject Categories to the Consonant, Mildly Dissonant and Strongly Dissonant Chords

Subject categories	Number	Mean percent GSR Consonant chord	Mildly dissonant chord	Strongly dissonant chord
Music majors				
Male undergraduates	6	3.32	2.00	3.40
Female undergraduates	6	4.55	3.76	5.29
Male graduates	6	2.62	2.40	2.84
Female graduates	6	6.32	5.81	4.45
All music majors	24	4.20	3.49	4.45
Nonmusic majors				
Male undergraduates	6	3.70	3.17	4.22
Female undergraduates	6	1.39	1.17	1.31
Male graduates	6	3.11	2.97	4.11
Female graduates	6	4.01	3.80	5.32
All nonmusic majors	24	3.05	2.78	3.74
All subjects	48	3.63	3.13	4.19

* Galvanic skin response.

Table 2.--Analysis of Variance for Differences in Mean Percent GRS for the Consonant, Mildly Dissonant and Strongly Dissonant Chords

Source of variation	Degrees of freedom	Sum of squares	Mean square	F
Column means	2	86.25	43.13	4.50
Row means	47	6,371.36	135.56	14.13
Interaction	94	507.57	5.40	.563
Subtotal	143	6,965.18		
Within groups	432	4,145.17	9.595	
Total	575	11,110.35		

The obtained value of F for column effects (differences between chords) was considered sufficient for significance at the five percent level. Thus the first of the two null hypotheses was rejected. The obtained value of F for row effects (difference between subject categories) was considered sufficient for significance at the one percent level. The second of the two null hypotheses was therefore rejected. However, the difference in response between music majors and nonmusic majors did not reach the five percent level of significance.

The Second Experiment

> The purpose of the second experiment was to determine if there is any difference in affective response as measured by the Hevner Adjective Circle to three versions of short musical excerpts varying only in terms of gross harmonic tension. Two related problems considered here were (1) whether or not other musical elements have any influence upon differences in effect'caused by changes in harmonic tension and (2) whether or not there is any difference between music majors and nonmusic majors in affective response to changes in harmonic tension. (p. 151)

> The subjects were 216 students at Indiana University divided into three equal groups as follows: 72 nonmusic majors, mostly undergraduate; 72 undergraduate music majors, and 72 graduate music majors. The subject categories were intended to represent the average listener, the fairly well trained listener, and the highly trained listener. (p. 152)

The procedures involved in the preparation of the musical stimuli for the second experiment are too involved for a complete presentation in this review; therefore, for a detailed description the reader must refer to the dissertation itself. In brief, the stimuli used were nine short musical selections, six were "parodies" of portions of well-known compositions and three were original. The parodies were judged by a group of faculty members and graduate students to be similar in "affective tone" to the originals. The nine examples employed a variety of meters, tempos, dynamic levels, and articulations; and varied in length from 30 to 65 seconds. Each selection was harmonized in three ways using chords of only one of the three classifications evolved in Chapter II.

The stimuli were presented to the students in classroom situations with 60 seconds following each example being allowed for the checking of responses on the Hevner Adjective Circle. The responses are summarized in the following table. (The adjective groups represented by Roman numerals are: Group I, dignified, lofty; Group II, sad, frustrated; Group III, calm, plaintive; Group IV, dainty, gentle; Group V, sparkling, quaint; Group VI, bright, rapturous; Group VII, elated, stirring; Group VIII, triumphant, exalting.)

Table 3.--Number of Adjectives Checked by Nonmusic Majors, Undergraduate Music Majors, and Graduate Music Majors for Consonant, Mildly Dissonant, and Strongly Dissonant Versions of the Nine Musical Examples

Adjective groups	Nonmusic majors	Music majors	
		Undergraduate	Graduate
Consonant versions			
I	417	342	305
II	116	97	64
III	198	209	142
IV	134	141	96
V	192	201	148
VI	234	216	146
VII	96	91	60
VIII	153	99	80
Total	1,540	1,396	1,041
Mildly dissonant versions			
I	258	117	121
II	133	89	83
III	217	290	227
IV	150	194	168
V	221	220	212
VI	302	253	249
VII	104	64	47
VIII	96	48	28
Total	1,481	1,275	1,135
Strongly dissonant versions			
I	197	152	139
II	383	427	357
III	79	75	51
IV	50	56	37
V	255	261	231
VI	234	176	101
VII	160	143	92
VIII	67	60	50
Total	1,427	1,350	1,058
Grand total	4,448	4,021	3,234

Conclusions

In addition to those inferences already mentioned Winold draws the following conclusions based upon the data of his two experiments.

> Autonomic response as measured by the galvanic skin response to isolated chords is significantly less for mildly dissonant sonorities than for consonant or strongly dissonant sonorities.
>
> Changes in the gross harmonic tension...of complete musical passages can produce significant changes in affective response as measured by the Hevner Adjective Circle. Musical examples with mostly consonant sonorities tend to be characterized as dignified, spiritual, triumphant, majestic; musical examples employing primarily dissonant sonorities tend to be characterized as calm, dreamy, gentle, sentimental, dainty, lyrical, happy, light; and musical examples featuring mostly strongly dissonant sonorities tend to be characterized as tragic, depressing, frustrated, humorous, whimsical, agitated, and exciting.
>
> The results of this study of the affective response to varying levels of harmonic tension show some differences when compared to the results of a somewhat similar study on the effects of harmonic tension reported 25 years earlier, indicating the possibility that a change in listener response has occurred in the intervening period.
>
> The observed differences in affective response to music with different levels of gross harmonic tension are observed primarily in slower, softer, legato musical examples.
>
> The response of both trained and untrained listeners to changes in harmonic tension tends to be similar both in terms of galvanic skin response and in terms of subjective response with the Hevner Adjective Circle. (pp. 210-212)

Comments

The author's historical review of theories of consonance and dissonance will be of value to anyone not having studied in this area; however, the necessity of presenting this survey as a rationale for a nonfunctional definition of consonance and dissonance is questionable.

Although Winold states that "the study was undertaken only to investigate tendencies, and not to discover absolutes," it is difficult for this reviewer to accept some of his conclusions as necessarily being indicative of tendencies.

Concerning the design of the first experiment Winold admits that two basic assumptions of the analysis of variance technique (random sampling from normally distributed population and equality of variances) were violated. Cochran's test applied to the assumption of equality of variance resulted in the rejection of the hypothesis of homoscedasticity at the five percent level of significance; and two other transformations of the data failed to yield a significant value of F for column effects. Winold apparently accepts the idea that the results of an analysis of variance are changed very little by "moderate" violations of the assumptions of normal distribution and equal variance. This reviewer would question whether the term "moderate" is applicable to the violations in this experiment. There is no logical reason to assume that the relatively small sample of 48 students is typical of college music majors and non-music majors in general or even of those who attend Indiana University.

It is generally agreed that GSR is especially sensitive to both sensory and ideational stimuli. In experiments involving adults it would be extremely difficult, if not impossible, to isolate either the sensory or the ideational stimulus as the cause of a particular GSR. Consequently, in such experiments a nonfunctional classification of the musical stimuli (e.g., the system developed in this study) should be accompanied by a nonfunctional classification of the ideational stimuli. (In a certain sense this is what the Hevner Adjective Circle used in the second experiment is.) A basic adult human response to aural or other sensory stimuli is what might be called the "act of classification." The class to which the sensory stimulus is assigned by the individual becomes then an ideational or symbolic stimulus. We assume, of course, that persons who have had theoretical training in music have available certain categories for the classification of aural stimuli. However, we may not assume that lack of such training necessarily implies a lack of categories for the act of classification. The difficulty of correlating sensory stimulus with ideational stimulus with GSR is obvious; but until this is possible, measurement of GSR will have little value for the music theorist or the music therapist.